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THE TREATMENT OF BRONCHIAL FISTULAS

REPORT OF CASE *

ALBERT E. HALSTEAD, M.D.
AND
HERBERT F. THURSTON, M.D.
Senior Surgeon and Assistant Surgeon, respectively, St. Luke's Hospital
CHICAGO

A bronchial fistula is a communicating fistulous tract between a bronchus and the pleural surface of the lung or of the cutaneous surface of the thoracic wall. Anatomically, there are bronchopleural and bronchocutaneous fistulas. The fistula may be lined by epithelium throughout, so that the bronchial mucosa is continuous with the thoracic skin, or both ends may be lined by epithelium for certain distances and the intervening space may or may not be covered by a granulating surface. A bronchopleural fistula results with an accompanying pneumothorax when a lung abscess ruptures into the pleural cavity. Small bronchopleural fistulas are encountered sometimes in treating an acute empyema, or when operating for a chronic empyema. A bronchocutaneous fistula may exist in connection with a chronic empyema. Often it constitutes the principal condition that causes the patient to seek treatment. Bronchocutaneous fistulas are most often due to operative intervention in the case of a lung abscess or a gunshot wound.

Celsus [1] was perhaps one of the first to mention fistulas of the chest, saying, "Fistulas of the chest are very difficult of treatment, so that sometimes physician, sometimes patient, giving up hope, leaves the case to Nature herself."

In the writings of Fabricus ab Aquapendente [2] some of the instruments used by Hippocrates and Paulus Aegineta are described. He stated that most persons who had received a penetrating wound of the chest had to wear a silver tube for life, and that he knew of patients who had carried tubes from twenty to thirty years. In discussing the treatment, he says the hard skin of the fistula should be removed either by softening or by instruments. Furthermore, all corruption must be removed, and the fistulous tract straightened by cutting the curves with a knife.

On the basis of etiology, Eggers [3] makes the following classification of bronchial fistulas: (*a*) those due to intrapulmonary suppuration; (*b*) those due to external violence. The two commonest forms of intrapulmonary suppuration are bronchiectasis and lung abscess. Tuberculosis [4] also is a frequent cause of lung abscess. Acute lung abscesses may be embolic (metastatic abscesses) or may result from perforation of the lung from without or from trauma to the lung. Suppuration in neighboring organs may give rise to lung abscess; on the right, from perforation from an abscess of the liver or suppurating echinococcus cyst. The aspiration of infectious material and foreign bodies into the bronchi is a very common cause of lung abscesses. They may follow bronchopneumonia and, occasionally, lobar pneumonia. Other pathologic conditions that may be directly or indirectly the cause of bronchial fistulas are pulmonary actinomycosis, gangrene of the lungs, mediastinal abscess and vertebral necrosis. In frank lung abscesses, it is almost always the rule to find free communication with the bronchial tree. They may rupture spontaneously into the pleural cavity or be operated on with a bronchial fistula resulting as the usual thing. Spontaneous rupture is followed by a sudden increase in the severity of the symptoms.

Wilensky [5] remarks that the dynamics of intrathoracic conditions are such as are most conducive to unrestricted persistence of bronchocutaneous fistulas. He feels that the most important cause of the obliteration of an empyema cavity is the constant exertion of a distending force produced by the inspiratory dilatation of the pulmonary parenchyma. When this is interfered with, a most efficient factor in healing is destroyed. Under certain conditions an empyema cavity may grow larger rather than smaller. He believes that in order to have a lung properly distended, the caliber of the opening in the chest wall must be smaller than that of the main bronchus. It is evident, therefore, that the distending effect of inspiratory force can be completely nullified by the presence of a bronchial fistula.

Hedblom [6] has observed that the most common causes for the persistence of bronchial fistulas are extreme sclerosis of the walls of the sinus, foreign bodies in the lungs or bronchus and, occasionally, tuberculosis. Eggers [3] adds as another common cause the epithelization of the fistulous tract.

* Read before the thirty-sixth annual meeting of the Western Surgical Association, Duluth, Minn., Oct. 15, 1926.

1. Celsus, Aurelius Cornelius: Of Medicine, in eight books translated by James Grieve, London, Wilson and Durham, 1756; quoted by Hedblom, C. A.: Ann. Surg. **72**: 288 (Sept.) 1920.

2. Fabricus ab Aquapendente (Hieronymus): Opera Chirurgica, Francofurte, N. Hoffmarmus, 1620; De thoracis sectione in empyemati, Cap. XLVI, pp. 168-190, De thoracis fistulis, Cap. XLVIII, pp. 190-195; quoted by Hedblom.

3. Eggers, C.: The Treatment of Bronchial Fistulas, Ann. Surg. **72**: 345 (Sept.) 1920.

4. Germain, L. F., in Tice, Frederick: Practice of Medicine, Hagerstown, Md., W. F. Prior Company, Inc. **5**: 554.

5. Wilensky, A. O.: Bronchopulmonary Fistulae: Their Importance as a Common Cause of Acute and Chronic Empyema, Ann. Surg. **73**: 30 (Jan.) 1921.

6. Hedblom, C. A.: The Treatment of Chronic Empyema, Ann. Surg. **72**: 288 (Sept.) 1920.

The interesting observation is made by Wilensky [5] that in a small number of cases the constant presence of low grade infection in the bronchial tree, with the superimposition of repeated attacks of acute inflammation, furnished an important cause for the constant reinfection of the fistulous tract and refusal to heal.

Keller [7] reports thirty-five cases of bronchial fistulas, of which 84.2 per cent were due to intrapleural suppuration, 13.2 per cent to external violence, such as gunshot wounds, and 2.6 per cent to extrapleural suppuration (subdiaphragmatic abscess).

Fig. 1.—Safety pin lying at the level of the fourth, fifth and sixth cervical vertebrae.

In two cases, in the experience of Heuer,[8] bronchial fistulas have developed in the course of the irrigation of an empyemic cavity with surgical solution of chlorinated soda (Dakin's solution). In one case, there had been a history of a previous bronchial fistula which had apparently been close for three months. In the other case, there had been no previous history of a bronchial fistula. He found that this combination prevented for a time the continuation of the use of surgical solution of chlorinated soda because of the paroxysms of coughing which it produced and the fear of strangulation.

Stevens [9] declares that many bronchial fistulas are undoubtedly due to improperly prepared surgical solution of chlorinated soda. Especially has this occurred

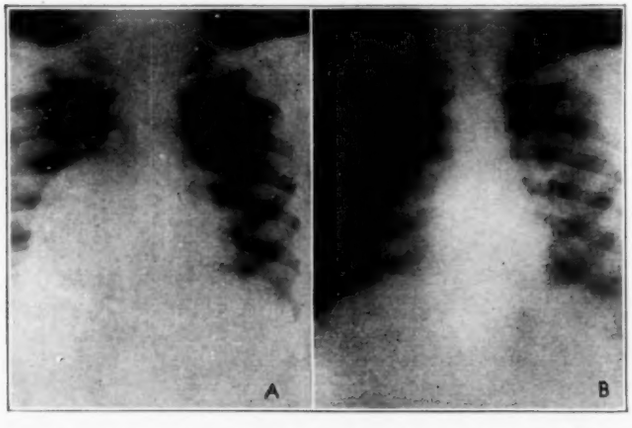

Fig. 2.—*A*, large circumscribed mass involving the lower half of the right side of the chest extending outward to the midclavicular line and up to the third rib anteriorly; *B*, appearance a month later; a thick capsule limits the mass of the right side of the chest; density of the mass is less marked.

in the treatment of streptococcal empyemas in which the surface of the lung is studded with small abscesses which offer ready communication between the bronchioles and the pleural cavity when the cicatricial tissue is removed. While bronchopleural fistulas may result in the course of the treatment of acute or chronic empyema, Wilensky [5] notes that it is often a factor interfering with the healing of an empyema, and may be one of the greatest problems in its treatment. A bronchial fistula may be a very frequent complication of empyema in cases in which no disturbance of healing is apparent, and in which knowledge of its presence is lacking.

Tuffier [10] has noticed two effects from the infection associated with bronchial fistulas: first, a necrosed bronchial cartilage, and, second, a bronchial ectasia about the fistula in which there were a series of cavities varying in volume from that of a pea to that of a filbert, honeycombed and containing pus. He reports four cases of acute empyema that became chronic from these causes.

A narrow epithelial fistula may cause little trouble or may not cause any, and the disability from it may not be considered great enough to demand an operation. This is illustrated by Thompson's [11] case of a long-standing bronchial fistula in a boy, aged 16 years, without any interference in his health. A large calibered fistula may cause considerable discomfort and may actually incapacitate its possessor from any physical effort, because the air current passing in and out with respiration interferes with aeration and diaphragmatic function.

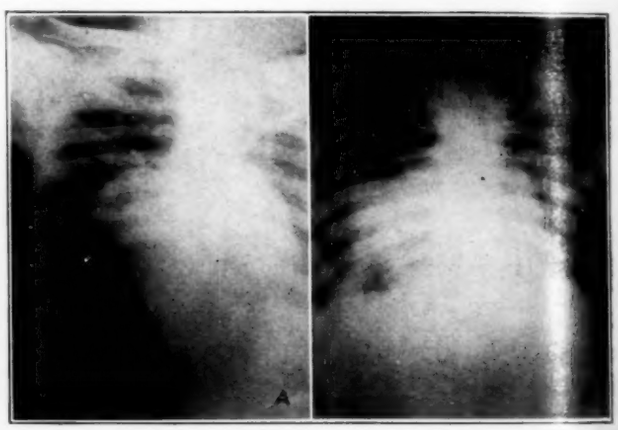

Fig. 3.—*A*, appearance the day following the resection of a part of the ninth and tenth ribs, showing the ring which is inserted in the opening in the chest wall to establish its relations to the abscess cavity; the ring is at the lower and external part of the dense mass. *B*, three weeks after drainage of abscess: Its outlines are no longer sharply defined, its density is much lessened, and the process has become much more diffuse.

The diagnosis of bronchial fistula is generally quite simple. The existence of a bronchocutaneous fistula is self-evident. A bronchopleural fistula may be more obscure. Small bronchopleural fistulas were judged present by Hedblom [6] in those cases of empyema in which the patient coughed and tasted the chlorine when the cavities were being irrigated with surgical solution of chlorinated soda.

In order to outline the tract and visualize it by means of the roentgen ray or the fluoroscope, Tuffier [12] advocates the use of iodized oil for the injection of the

7. Keller, W. L.: The Treatment of Bronchial Fistulas, J. A. M. A. **81**: 1006 (Sept. 22) 1923.
8. Heuer, G. J.: The Treatment of Chronic Empyema: Complications Following Irrigation of Empyemic Cavities with Dakin's Solution, Ann. Surg. **72**: 80 (July) 1920.
9. Stevens, F. A.: The Effects of Irrigation with Surgical Solution of Chlorinated Soda, J. A. M. A. **83**: 1495 (Nov. 8) 1924.
10. Tuffier, T.: The Treatment of Chronic Empyema, Ann. Surg. **72**: 266 (Sept.) 1920.
11. Thompson, S.: A Case of Old Standing Bronchial Fistula Not Interfering with Health, Tr. M. Soc. London **34**: 458, 1910-1911.
12. Tuffier, T.: De l'utilité de l'injection de lipiodol dans le traitement des fistules bronchocutanées, Bull. et mem. Soc. de chir. de Paris **49**: 799, 1923.

fistula. He finds its use valuable in searching for the cause of the permanence of the fistula.

In the discussion of the treatment of bronchial fistulas, a universal note of warning is sounded against the too hasty closure of them. Many fistulas, if left long enough, will close spontaneously.[13] If closed in the presence of suppuration, serious complications may result. Graham[14] feels that there is too much tinkering with them and his practice is to be very slow in closing them. He believes that every bronchial fistula should be given months and years to close spontaneously. He finds that serious complications, such as abscess of the brain, sometimes ensue after permanent closure. This could occur only when the abscess cavity persists. Operation should be delayed in the presence of active suppuration. If the fistula persists too long, the cause of the fistula should be sought for and, if possible, removed before any attempt is made to close the fistula. If, for the reasons given above, fistulous tracts persist after the originating focus has ceased to exist, they should be closed.

Other methods than operation have been employed in the treatment of bronchial fistulas. Harris[15] was successful in closing a sinus of twelve years' standing by the use of radium. He gave 4,200 milligram hours over a period of ten weeks. Within four months, the

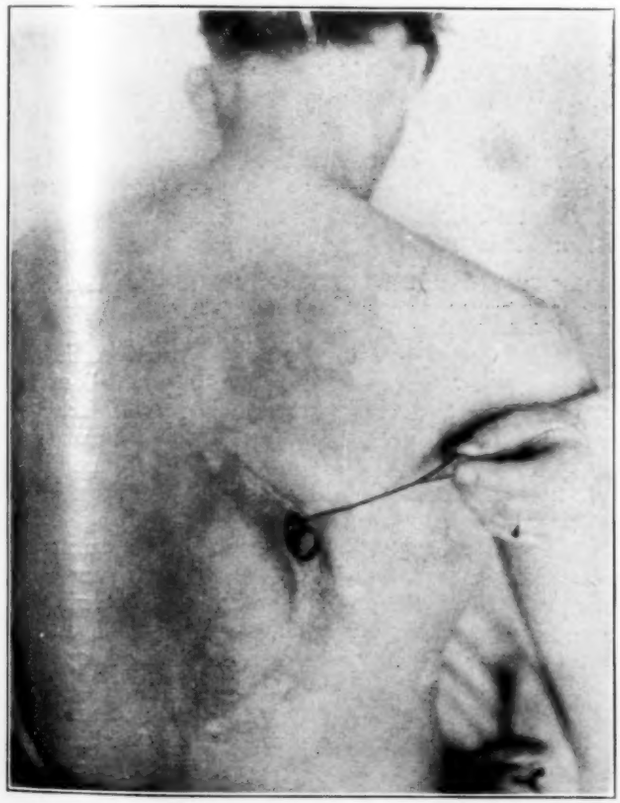

Fig. 4.—Scar of incision for drainage of abscess and the cavity of chest wall, seen on reentry of the patient to the hospital, April 18, 1926; the probe is inserted in a bronchial opening.

scar tissue had disappeared and the sinus, measuring 7 inches (17.8 cm.), gradually closed.

The use of pastes of various kinds is, generally speaking, objectionable, because frequently the paste passes into the lung and becomes widely disseminated throughout the bronchial tree.[16] In a case reported by Ochsner,[17] much of the 650 cc. of Beck's paste injected was expectorated, but the pus and sepsis subsided rapidly and the sinus closed. One large bronchial fistula encountered is in a series of chronic empyema cases treated by Lilienthal[18] and closed after injection with

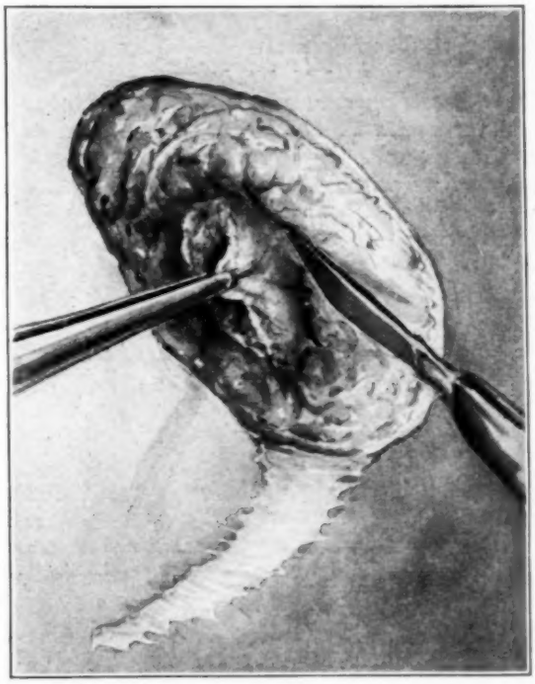

Fig. 5.—The scar tissue lining the cavity in the chest wall and covering the exposed part of the lung is excised.

Beck's paste for roentgen-ray diagnosis. Our experience in the treatment of any kind of fistulas by the use of Beck's paste has been that one should not expect favorable results.

Before operating, such simple measures as swabbing out with iodine, nitric acid or pure phenol (carbolic acid), or denudation of the tract with a curet should first be tried. Bickham[19] states that if the communication is with a large bronchus, the tract should be exposed down to the opening into the bronchus. The opening into the bronchus should be sutured with catgut. Keller[7] believes that only a small percentage of bronchial fistulas can be inverted, but such technic is probably satisfactory when they are not too near the hilum of the lung. In a very interesting series of experimental closures of large bronchi in dogs, Bettman[20] found that a cut bronchus heals rapidly and firmly, but the healing is brought about by peribronchial tissues. The bronchial tissue itself did not seem to undergo regeneration. The fibrous tissue that had closed the bronchus seemed to have sprung from the pleura of the lung tissue, which in the operation was plastered over the cut end of the bronchus.

Of thirty-five cases of bronchial fistulas treated by Keller,[7] closure was obtained in 39.6 per cent by simple

13. Bourde, Y.: Les fistules thoraciques, Gaz. d. hôp. **95**: 1653, 1922.
14. Graham, E. A., in discussion on Pneumectomy with the Cautery, J. A. M. A. **81**: 1012 (Sept. 22) 1923.
15. Harris, W. L.: The Closure of Bronchial Fistula of Twelve Years' Standing by the Use of Radium, M. J. & Record **120**: 590 (Dec. 17) 1924.
16. Graham, E. A.: Acute and Chronic Empyema, Surg. Gynec. Obst. **38**: 466 (April) 1924.
17. Ochsner, A. J.: The Treatment of Fistulas and Abscesses Following Operations for Empyema of the Thorax, Tr. Am. Surg. A. **27**: 143, 1909.
18. Lilienthal, H.: Thoracic Fistulae and Chronic Empyema, Ann. Surg. **70**: 43 (July) 1919.
19. Bickham, W. S.: Operative Surgery, Philadelphia, W. B. Saunders Company **3**: 942, 1924.
20. Bettman, R. B.: Experimental Closure of Large Bronchi: A Study of the Factors Concerned in Failure of Bronchi to Heal, Arch. Surg., part 2 **8**: 418 (Jan.) 1924.

mobilization and sterilization; in 50 per cent by mobilization and partial suture of the fistula plus muscle implantation, and in 10 per cent by mobilization plus muscle implantation without sutures. In one case, closure was made by inversion. Kellar found that one of the most difficult problems was the treatment of multiple fistulas in tuberculosis cases in which radical operations had been performed for empyema, and in which the patients were still carrying hemolytic streptococcus organisms in the sinuses. In such cases he closed the lesser fistulas by cautery, by mobilization or by purse string suture reenforced by muscle graft held under pressure. The larger fistulas were left open in such cases until the lesser were closed; then they were closed by partial suture and muscle implantation.

In reviewing 150 cases of chronic empyema treated at the Mayo Clinic, Hedblom [6] found three groups of bronchial fistulas in this series; namely, those in which the fistulas closed spontaneously, those in which they were obliterated by operative procedure, and those in which they persisted. Those of the first group were uniformly small. A few were observed at operation, and the presence of others was noted by the patient's reaction to surgical solution of chlorinated soda when it was used to irrigate the empyemic cavity. Ten cases were closed by operative procedure, and in these the fistulas were 0.7 cm. or more in diameter. Three closed after wide open drainage was provided. One was closed by extensive resection and cauterization of the tract, and in another the scar tissue was completely

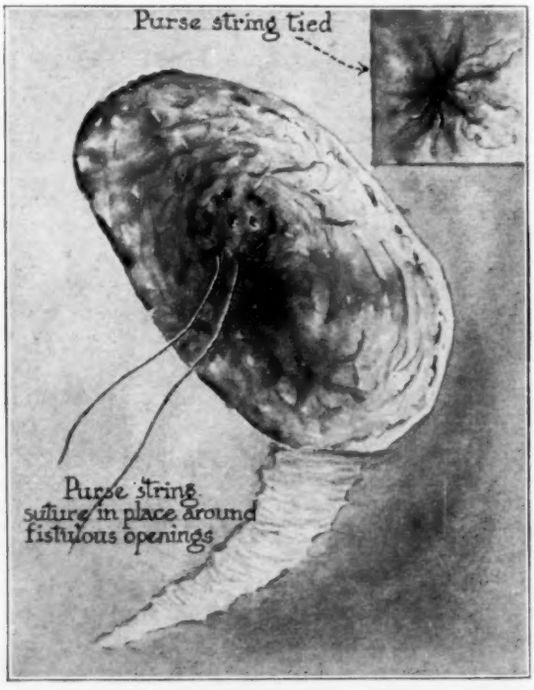

Fig. 6.—By means of purse string sutures of catgut the openings into the bronchi are closed and inverted.

removed and the edges of the fistula sutured after preliminary cauterization. The remaining four fistulas were closed by resection of the ribs and thickened pleura, followed by a skin plastic operation. Of the group of persistent bronchial fistulas, two were tuberculous cases. For one, an unsuccessful partial plastic operation was done; for the other, treatment was not given. A third patient had twenty or more bronchial fistulas in the same lobe of the lung with extensive bronchiectasis.

In chronic suppurations of the lung with bronchial fistulas, more radical measures are sometimes used. Tuffier [10] has resorted to the extirpation of the nidus of the cavities in the lung, which he has found resulting from bronchopleural fistulas, by incision (partial pneumectomy) into healthy lung tissue. A chronic lung abscess with bronchial fistula was dissected out by Bevan,[21] and the cavity was packed with iodoform gauze and allowed to close in by granulation. Graham [22] reports very favorable results in such cases by cautery pneumectomy, using a soldering iron heated to a red heat. The cauterization is begun by plunging the hot iron into the sinus and working out from that.

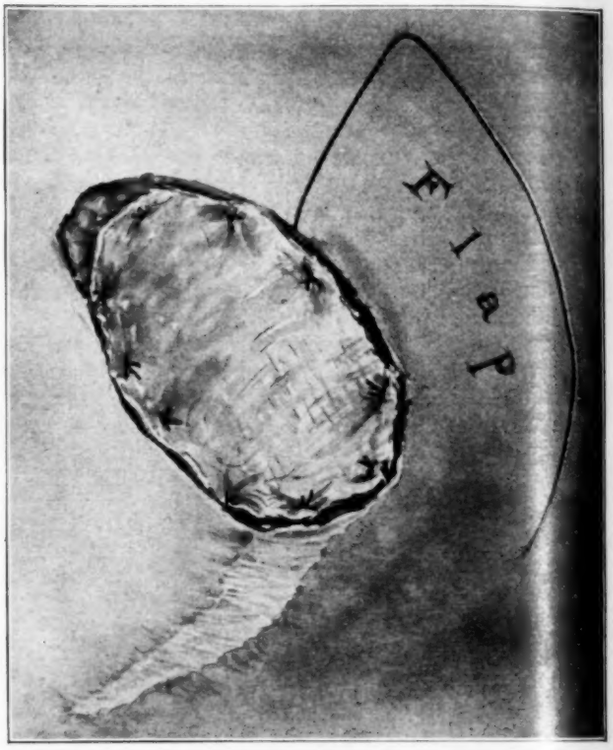

Fig. 7.—A flap of fat and fascia is used to fill in the cavity in the lung. The outline of the pedunculated flap of skin and muscle is seen.

In the case reported in this paper, the scar tissue lining the cavity in the chest wall and covering the exposed part of the right lung was excised, and by means of purse string sutures of catgut the openings into the bronchi were closed and inverted. A flap of fat and fascia taken from the patient's thigh was used to fill in the cavity in the lung. A pedunculated flap of skin and muscle was placed over this fascial flap and sutured to the surrounding skin edges with black waxed silk sutures. Tension sutures of heavy black waxed silk were used to pull the skin edges together, covering the space made by the shifting of the skin flap. The fistula remained closed (fig. 9).

REPORT OF CASE

J. F., a single white man, aged 24, who entered St. Luke's Hospital, April 18, 1926, was a crane man at the American Bridge Company of Gary, Ind., and at 11 p. m., July 25, 1924, he

21. Bevan, A. D.: Chronic Lung Abscess with Fistula: Treatment by Excision, S. Clinics, Chicago **3**: 1325 (Dec.) 1919.

22. Graham, E. A.: Cautery Pneumectomy for Chronic Suppuration of the Lung, Arch. Surg. **10**: 392, part 2 (Jan.) 1925.

returned home from a show and went to bed feeling unusually tired. At 4 o'clock next morning he awoke and felt something in his throat which he could not swallow. His first thought was that this was a large beetle, such as are common in that locality. He swallowed bread crumbs and milk trying to get it down. He then thought of a safety pin used to pin his underclothing. This was missing. He probably unconsciously put it into his mouth when he retired the night before. A roentgenogram made in a Gary hospital revealed a safety pin with the open end up, anterior to the fourth, fifth and sixth cervical vertebrae (fig. 1). He came to St. Luke's Hospital, and on the evening of that day the pin was removed by Dr. J. A. Cavanaugh.[23] When he left the hospital, August 2, an examination of his chest was negative.

November 5, he reentered the hospital in the service of Dr. A. R. Elliott, complaining of cough, fever, night sweats and weakness, and he was coughing up much foul-smelling, grayish-green pus. November 6, a roentgenogram (fig. 2 *A*) interpreted by Dr. E. L. Jenkinson revealed a large circumscribed mass involving the lower half of the right chest, the capsule of which was thickened. December 22, under local anesthesia, the right ninth and tenth ribs were resected posteriorly; as adhesions between the visceral-parietal pleura were not present, the wound was packed, gauze soaked in 10 per cent zinc chloride solution being used, in order to form pleural adhesions. December 29, the pleura was incised and the abscess drained. By Jan. 21, 1925, a roentgenogram revealed an improvement: the outlines were not sharply defined, the abscess cavity was not so dense, and it contained less pus than at the former examination (fig. 3 *B*). The patient was discharged from the hospital, February 10, with a bronchial fistula which required dressings twice a week. His subsequent history has been uneventful prior to his reentry into the hospital.

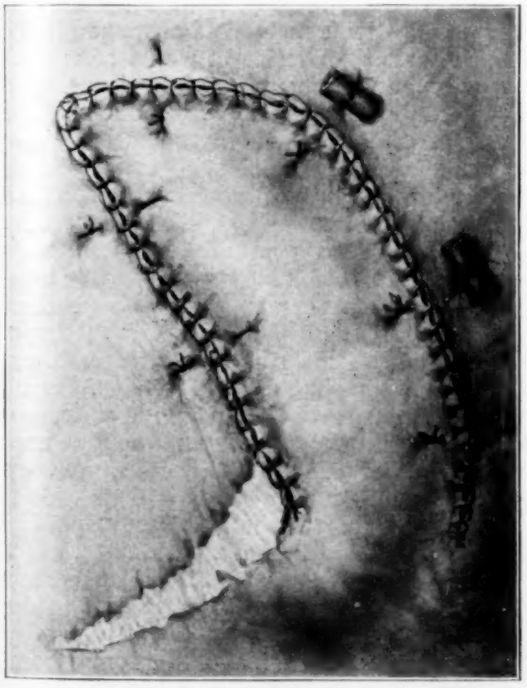

Fig. 8.—The pedunculated flap of skin and muscle is sutured to the surrounding skin edges with tension sutures of heavy black waxed silk and continuous waxed silk sutures.

On entrance there was a cavity of the back of the right side of the chest about 4 by 6 cm. in its greatest dimensions. Its center was 7 cm. to the right of the midline of the back and at the level of the ninth intercostal space. On expiration the cavity was 1.5 cm. deep, and on inspiration it was obliterated by the expansion of the right lung ballooning out and filling it. The cavity was lined by smooth scar tissue, and at its inner side were two bronchial fistulas, each not over 2 mm. in diameter and surrounded by a firm ring of scar tissue (fig. 4).

23. Cavanaugh, J. A.: Lung Abscess Following Safety Pin in Esophagus, Ann. Otol. Rhin. & Laryng. **34**: 1280 (Dec.) 1925.

CONCLUSIONS

1. The most common type of bronchial fistula is the bronchopleural occurring in conjunction with pulmonary tuberculosis with tuberculous empyema. These are generally not amenable to surgical treatment.

2. Bronchopleural fistulas occurring in the course of an empyema (nontuberculous) generally close spontaneously when the empyema cavity closes. Irrigation of an empyema cavity in the presence of a bronchial fistula should never be practiced.

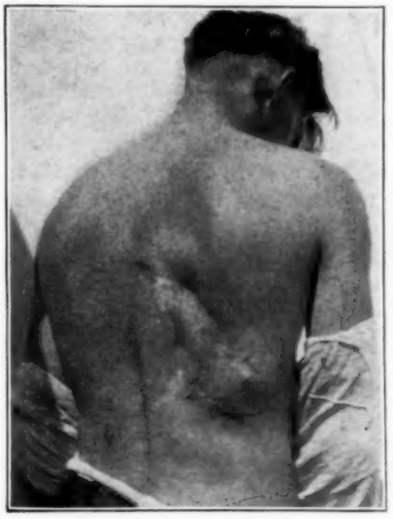

Fig. 9.—The scars of the plastic operation of the chest four months after the last operation; the fistula remained closed.

3. In bronchocutaneous fistulas arising from abscess or gangrene of the lung, operative measures aimed at the closure of the fistula should not be attempted until the abscess cavity has closed or the gangrenous tissue has sloughed and the cavity has become clean.

4. After the simpler nonoperative methods, such as cauterization of the tract, have failed to close the fistula, the rational procedure is to (*a*) clear the fistulous tract from its cutaneous orifice to the bronchus by sharp dissection of its epithelial lining and also the surrounding fibrous tissue; (*b*) close the opening into the bronchus by a purse string suture through the peribronchial connective tissue and (*c*) transplant sufficient fat with fascia to fill the depression in the lungs and cover this transplant by a plastic operation on the chest wall, the transferred flap being made up of skin, fascia and muscle.

Operative Treatment of Gastric Carcinoma.—In the operative treatment of gastric carcinoma one should always aim at a radical operation, and the first question to decide in any given case is whether any condition is present which puts out of court any hope of a radical removal. . . . Apart from conditions of a general and constitutional nature such as would preclude any severe operation, certain local conditions are definite contraindications: (1) enlargement of the liver, especially if associated with "umbilicated" nodules; (2) ascites of a degree sufficient to be detected clinically; (3) enlarged glands in the supraclavicular region, particularly on the left side; (4) secondary peritoneal deposits engrafted, by gravity, on the pelvic peritoneum and detectable clinically on rectal examination as an induration of the rectovesical pouch . . . and (5) a mass palpable through the abdominal wall is frequently held to contraindicate radical measures, but does not necessarily do so. It depends more on the question of fixity than of palpability. A palpable mass, if fixed, would certainly prevent a radical operation, but not so if mobile.—Burgess, A. H.: Cancer of the Gastro-Intestinal Tract, *Brit. M. J.* **1**:1 (Jan. 1) 1927.

BILATERAL LUMBAR SYMPATHETIC GANGLIONECTOMY AND RAMISECTOMY

FOR POLYARTHRITIS OF THE LOWER EXTREMITIES*

LEONARD G. ROWNTREE, M.D.
AND
ALFRED W. ADSON, M.D.
ROCHESTER, MINN.

The need of improvement in our methods of treatment of chronic arthritis cannot be questioned. The constant presence in every community of partially or completely disabled victims bespeaks our inability to cope successfully with this disease. Every physician of broad experience has had, in both private and hospital practice, cases in which there has been relentless progression of the disease in spite of his most assiduous efforts. In such a case of so-called nonspecific rheumatoid arthritis, or arthritis deformans, we have attempted a new form of treatment.

The patient with this form of chronic arthritis usually suffers from cold clammy hands and feet. The extremities are not only cold to the touch, but also show pallor, areas of cyanosis, puffiness of the tissue, and so-called trophic changes, and are usually covered with a fine film of moisture. These signs indicate a localized vasoconstriction of the arterioles, capillaries and probably the venules of the skin, a mild disturbance somewhat similar to that seen intermittently in Raynaud's disease. Certain forms of arthritis, such as Charcot's disease and syringomyelia, are already

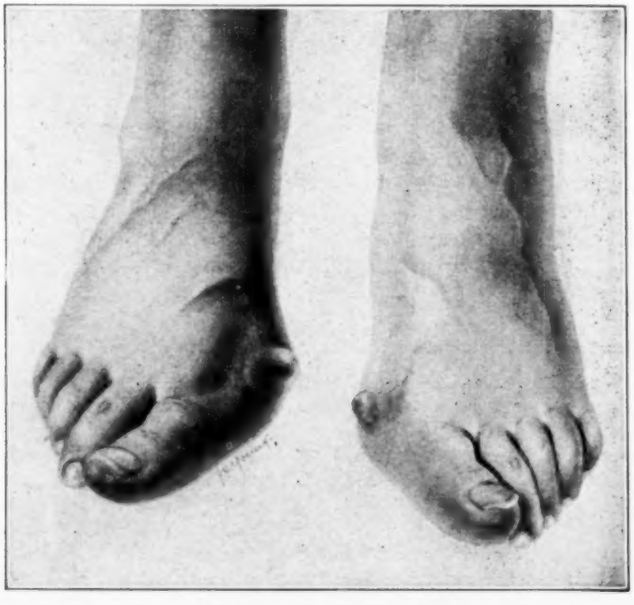

Fig. 1.—Feet in the dependent position, before operation on the sympathetic ganglions. The patchy discoloration and trophic changes are evident.

regarded as neurogenic in origin. The changes that occur in other forms of arthritis, instead of being strictly trophic, may be the result of partial ischemia. The changes that follow the exposure of a joint to a current of cold air, and the frequent association of exposure with the onset of "rheumatism and arthritis," lend weight to the hypothesis that, in certain susceptible persons, abnormal functional changes, predisposing to infection, may produce in a joint a pathologic disturbance or a lowering of vasomotor tone.

When we analyze our old forms of management of this disease and consider more especially the local measures used, we find that most of them aim at

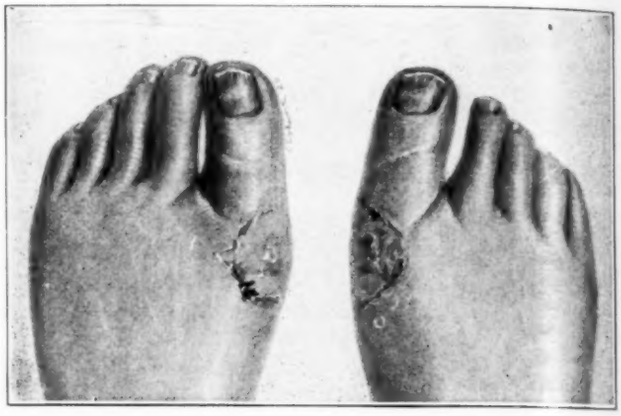

Fig. 2.—Feet after operation, held level with the body.

increasing the circulation and temperature of the joint or extremity. This is true for hot applications, warm clothing, heliotherapy, baking, diathermy, non-specific vaccines and, indirectly, for massage and exercise. With these forms of heat therapy, however, the application is intermittent. Some method of continuously increasing temperature and circulation would seem desirable. If now we turn to the results of lumbar sympathetic ganglionectomy and ramisectomy in other diseases, one of the most striking changes, as noted by Brown and Adson,[1] is the marked and enduring increase in the circulation and in the temperature of the feet. The sensation of warmth of the feet is one of the most marked subjective clinical results following operation.[2]

These factors furnish the rationale for the treatment outlined in the present case report. Without attempting to discuss at any length the validity of the hypothesis that rheumatoid arthritis may be primarily a disturbance of sympathetic innervation of vasomotor control, and omitting such details of the history as might explain, on the basis of a neurosis or otherwise, the supposed abnormal state of the sympathetic nervous system, we shall present the salient features of the case before and after operation. If the ultimate result is satisfactory in this case and a sufficient number of others, it will then be time enough to discuss the relation of the circulation and its sympathetic control to diseases of the joints.

The patient here presented had suffered from generalized chronic arthritis for six years and finally had become incapacitated for work. After a period of hospital observation and treatment it was decided that nothing further could be done by means of medical management, and the patient was about to be dismissed. As a result she became greatly depressed and expressed herself as willing to "try any sort of an experiment,"

* From the Division of Medicine and the Division of Surgery, Mayo Clinic and The Mayo Foundation.

1. Brown, G. E., and Adson, A. W.: Calorimetric Studies of the Extremities Following Lumbar Sympathetic Ramisection and Ganglionectomy, Am. J. M. Sc. **170**: 232-240 (Aug.) 1925.
2. Rowntree, L. G., and Adson, A. W.: Bilateral Lumbar Sympathetic Neurectomy in the Treatment of Malignant Hypertension, J. A. M. A. **85**: 959-961 (Sept. 26) 1925.

since life with arthritis was proving too great a burden. The possibility of relief from lumbar sympathetic ganglionectomy and ramisectomy was suggested by one of us, and, despite our statement that it would be "entirely in the nature of an experiment," she requested the operation.

REPORT OF CASE

The patient was a single woman, aged 34, a stenographer. The family history did not have any known bearing on her condition. She had had scarlet fever at 6 years of age and again at 10, and tuberculous glands at 16. The onset of menstruation had been late (at 17) and there had been dysmenorrhea during the next few years. In 1917, she had received serious injuries in a railroad accident: five ribs were crushed, the right clavicle and left arm were fractured, and she was in a hospital for more than two months. Appendectomy had been performed in 1920. In August, 1920, she noticed stiffness and swelling of the interphalangeal joints of both hands. In the next two months the wrists, the elbows and shoulders, and within the year also the feet, the ankles and knees, were involved. The condition progressed with intermittent exacerbations, most marked at the time of the menses. A year before examination the teeth were removed, without any striking improvement in the course of the arthritis. When she came to the clinic her joints were especially stiff and sore in the morning, and she had increasing difficulty in "limbering up." By taking from 10 to 20 grains (0.65 to 1.3 Gm.) of acetylsalicylic acid daily and using oil of wintergreen locally, she had succeeded, until a short time before her admission, in continuing at work, in spite of great discomfort.

The patient was tall and spare, weighing 101 pounds (46 Kg.). The mouth was edentulous; the tonsils had been removed; there were two scars on the neck posterior to the right sternomastoid; there were postoperative scars over the manubrium sterni and right scapula, and a scar from appendectomy. A systolic murmur was audible over the pulmonary area. There were palpable lymph nodes in the supraclavicular, axillary and epitrochlear regions. The urine was normal. The hemoglobin was 65 per cent, the acid hematin hemoglobin 15.6 Gm.; the erythrocytes numbered 4,040,000, and the leukocytes, 6,000. The blood urea was 24 mg. for each 100 cc., creatinine, 1.1; calcium, 10.1, and potassium, 24. The Wassermann reaction was negative. A gastric analysis showed a total acidity of 54 and free acid, 50. The basal metabolic rate on admission was —4 and is now +4.

Pain was a prominent symptom, and was marked over the metatarsal arch and in the wrists, elbows, shoulders and knees. The hands were cold, moist and clammy. The interphalangeal joints were all enlarged with spindle-shaped swellings of the middle and index fingers, and there was marked atrophy of the interossei and lumbricales muscles. The trophic changes were marked, the flesh soft and yielding, and the skin smooth and glistening and covered with a fine film of moisture. The feet were similar to the hands, but showed patches of cyanotic or purplish tint when in the dependent position (fig. 1). Bunions and flat feet contributed to their deformity. Puffiness was striking over the dorsal surfaces of the feet, and about the ankles the tissue felt boggy. Tender areas could be elicited by pressure on the lower end of the tibia or over the interphalangeal articulation. There was slight swelling of the ankles, knees, shoulders, elbows and wrists, but no discoloration. There was approximately 25 per cent limitation of motion in the ankles, 30 per cent in the wrists, 20 per cent in the elbows, and 50 per cent in the shoulders. Roentgenograms showed slight destructive arthritis of both wrist joints and periarticular arthritis of the phalangeal joints. There was some roughening of the shoulder joints due to arthritis. The condition was one of diffuse nonspecific arthritis with periarticular thickening and osseous destruction in varying degree. Crepitation was evident in the wrists, elbows, shoulders and knees. The spine and hips were unaffected.

The surgical procedure was similar to that followed in cases previously described,[3] in which sympathetic ganglionectomy and ramisectomy have been performed for Raynaud's disease and thrombo-angiitis obliterans. The patient is placed in the Trendelenburg position, and median line incisions, together with transperitoneal incisions, are made, exposing the sympathetic ganglions first on the right and then on the left side. The second, third and fourth lumbar sympathetic ganglions on both sides with the sympathetic trunk are removed, and all of the rami to the hypogastric plexus are divided, as well as those passing to the second, third and fourth lumbar nerves. The rami to the sacral nerves are not divided, as the sympathetic trunk is removed and all the efferent sympathetic rami to the lumbar and sacral ganglions thus severed.

Since the operation the patient's feet have been dry and of a normal pink; the skin has desquamated and the trophic changes have largely disappeared (figs. 2 and 3). The distal parts of the nails are still of the "trophic" type, while a zone of apparently normal nail has appeared proximally. The pain has disappeared entirely and has been replaced by a pleasant sensation

Studies of the Skin Temperature and Heat Elimination of the Left Foot

	Temperature, Degrees C.							Heat Elimination			
Date	Mouth	Room	Great Toe	Dorsum of Foot	Leg	Thigh	Hip	Total Calories for 20 Minutes	Surface Area of Foot, Sq. Inch	Calories for Each Min. for Each Sq. Inch	Comment
5/19/26 a.m.	36.6	24.0	25.6	35.0	34.0	34.8	36.3	.....	..	....	Feet cold, mildly cyanotic, sweating
5/19/26 p.m.	36.7	24.1	27.8	34.3	34.0	35.2	35.2				
5/20/26	37.0	23.2	25.9	33.8	33.3	....	....	1,300	85	0.76	
5/22/26	36.5	23.6	....	....	....	....	....	900	85	0.56	
6/1/26	....	....	....	....	....	....	....	.....	..	....	Operation: lumbar sympathetic neurectomy and ganglionectomy
6/3/26	....	....	35.5	35.9	35.3	36.1	35.6				
6/9/26	....	....	33.6	36.0	34.3	35.7	36.3				
6/11/26	....	....	33.7	35.3	34.9	36.3	36.5				
6/16/26 a.m.	36.1	23.2	....	....	....	....	....	1,920	85	1.12	Feet warm and dry
6/16/26 p.m.	36.4	23.6	....	....	....	....	....	2,700	85	1.58	Vessels pulsating
6/19/26	....	26.2	35.5	36.3	34.6	35.5	36.0				
7/27/26	36.7	26.0	30.9	30.9	30.6	32.0	32.1				
8/4/26	36.8	27.0	36.0	35.9	35.7	35.7	35.4	3,800	85	2.23	No pain, feet pink, warm, dry and comfortable

3. Adson, A. W.: Surgical Relief of Raynaud's Disease and Other Vascular Disturbances by Sympathetic Ganglionectomy and Perivascular Neurectomy, Ann. Clin. Med. **5**: 161-167 (Aug.) 1926. Adson, A. W., and Brown, G. E.: Treatment of Raynaud's Disease by Lumbar Ramisection and Ganglionectomy and Perivascular Sympathetic Neurectomy of the Common Iliacs, J. A. M. A. **84**: 1908-1910 (June 20) 1925. Brown, G. E.: Physiologic Studies on the Vasomotor Changes After Lumbar Sympathetic Ganglionectomy and Perivascular Neurectomy, Ann. Clin. Med. **5**: 168-175 (Aug.) 1926.

of warmth. In striking contrast to this is the condition of the hands, wrists and shoulders, where the disease is pursuing its usual course, and the patient complains of continuous pains in the upper extremities. The hands are still cold and clammy, and by actual measurement have been found to be 9 C. lower in temperature than the feet.

The transference of heat from the feet, as determined by the Stewart-Kegerreis calorimeter, measured in small calories given off each minute for each square

Fig. 3.—Feet in the dependent position, after operation. The blood is more evenly distributed and the feet show a uniform pink. (The operation on the bunions was incidental.)

inch of surface area, was low prior to operation and increased approximately from 300 to 400 per cent afterward. The potential vasodilatation was determined previous to operation by measuring the change in temperature following the administration of typhoid vaccine.[4] The surface temperature of the great toes, as determined by the Sheard thermocouple apparatus, increased 5 C. (9 F.) after the administration of vaccines, and 8 C. (about 14 F.) as a result of the operation. This increase has been maintained to date, as shown in the table.

Obviously, nothing more than the immediate results can be given at present, but these are most encouraging. There is still slight tenderness on pressure over the metatarsal bones and left ankle, and there is still some aching back of the toes after excessive walking, but the feet are warm and comfortable, especially when compared to the joints of the upper extremities. The patient reported that on the evening prior to dismissal she had walked fifteen squares, a distance of from 1½ to 2 miles.

The patient has requested cervical sympathetic ganglionectomy for the relief of the condition in the arms and shoulders. Such an operation has been postponed because, to date, this procedure has not produced the same favorable results on the vascular diseases of the upper extremities that have been obtained in the feet and legs by removal of the lumbar sympathetic chain. We have considered, however, performing perivascular neurectomy, which has given considerable relief in certain diseases, although it has failed in others. We believe that it is wiser, however, to defer further operative treatment until the results of the operation already performed have been observed for a period of six months or a year.

4. Brown, G. E.: The Treatment of Peripheral Vascular Disturbances of the Extremities, J. A. M. A. **87**: 379-383 (Aug. 7) 1926.

CHANGES IN THE ROENTGEN-RAY CARDIAC SHADOW

RESULTING FROM TUBERCULOSIS OF THE VERTEBRAE *

JAMES L. DUBROW, M.D.
DENVER

Tuberculosis, like syphilis, taxes the alertness of the clinician by its tendency to occur in an insidious manner and irregularly in many localities in the human body. Every irregular feature of a case without manifest and striking symptoms must be diligently inquired into. The modern slogan of early diagnosis and early treatment should not be allowed to lose its force through the common failure which later requires radical and destructive as well as incapacitating measures in order to accomplish only partial rehabilitation. The roentgenogram—a shadowgraph—offers multiple opportunities for both brilliant diagnosis and conspicuous errors and oversights, especially in cases with manifest pathologic changes due to a general disease of long duration, such as tuberculosis or syphilis. The change in the chest, of both the bony and the soft tissues, wrought by tuberculosis is too well known to require review, and the heart is not an exception to the influence exerted by this disease as to both contour and location. Adhesions in the chest in tuberculosis are common, and deviations of the thoracic organs as a result of fibrosis and adhesions are manifold and irregular. In addition, the heart itself suffers parenchymatous as

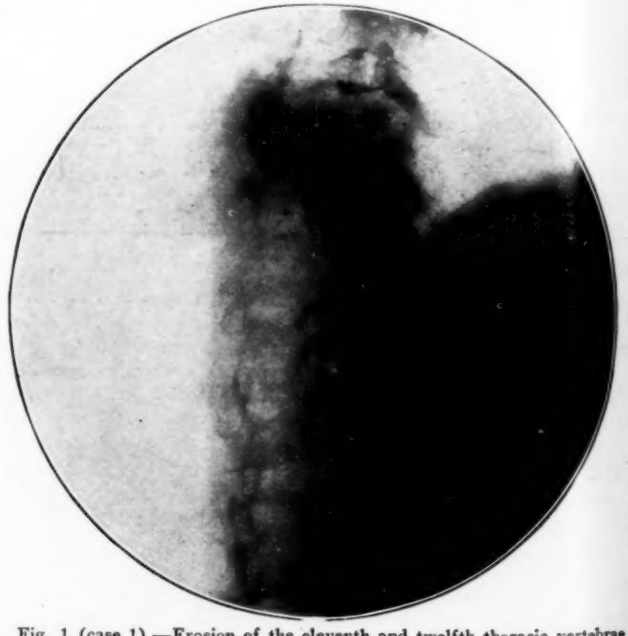

Fig. 1 (case 1).—Erosion of the eleventh and twelfth thoracic vertebrae with questionable evidence of abscess formation in spinal plate.

well as mechanical (obstructional) changes, all of which are commonly reflected on the roentgenographic shadow.

This deviation from the normal so common in tuberculosis makes the interpretation of shadows of fine definition difficult as well as important. The cardiac shadow especially becomes significant when it is considered that some of the most important structures in the chest are overshadowed in this region. In the

* From the National Jewish Hospital.

usual anterior posterior or posterior anterior roentgenogram taken of the chest, not only are the great vessels and mediastinal structures included or impinged on by the cardiac shadow, but the vertebrae in this region are many times overshadowed so that only gross outlines are distinctly visible. The prevalence of vertebral tuberculosis and abscess formation leading to the dreaded psoas abscess urges the necessity of early diagnosis with appropriate therapy, and herein a careful notation of the shadows within the cardiac shadow becomes important. Many times the early abscess is so located that even a lateral spinal plate is negative, while an anterior posterior plate reveals the condition or vice versa. It seems timely to call attention to the changes produced in the chest roentgenogram by tuberculosis of the vertebrae, and in order to emphasize this, a series of three interesting cases from the National Jewish Hospital are here recorded illustrating the characteristic features of these cases and the ease with which some of them may be overlooked unless one is aware of this condition.

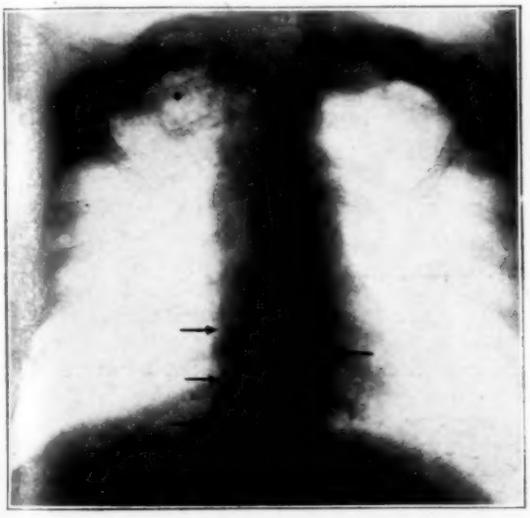

Fig. 2 (case 1).—Abscess shadow within the cardiac shadow and extending downward below it in chest plate.

The three cases assume importance since in some of them the condition remained undiagnosed, even though roentgen-ray chest plates had been taken, until at autopsy or late in the course of the disease.

REPORT OF CASES

CASE 1.—H. D., aged 37, an unmarried man employed as a waiter, developed the first signs of tuberculosis in 1911, when symptoms of laryngeal involvement were recorded. Tuberculosis of the genito-urinary tract developed in 1914, at which time a right orchiectomy was performed. In 1917, following an attack of influenza, there developed an aphonia of long duration. In 1923, the patient complained of soreness in the region of the lower ribs which might refer to the spine. At that time a brace was used to alleviate the condition. Following admission to the National Jewish Hospital, May 20, 1925, the patient complained of shooting pains in the legs associated with weakness in the lower extremities and partial loss of locomotion. At this time there was also a periodic involuntary defecation and micturition. Physical examination revealed an infiltration of the arytenoids, with the nose and throat normal. The chest examination revealed impaired resonance bilateral to the level of the fourth rib, with moist râles predominantly present in the right apex. The sputum was positive for tubercle bacilli. The urine examination and Wassermann reaction were negative. A roentgenogram of the spine showed an erosion of the eleventh and twelfth vertebrae with a tendency to kyphosis accounting for the symptoms of pressure on the cord. It is questionable whether the paravertebral shadows seen on the roentgen-ray plate of the spine can be interpreted as abscesses of the spine (several of the leading roentgenologists of Denver concurred in the negative opinion), but the distortion in the heart shadow seen in the

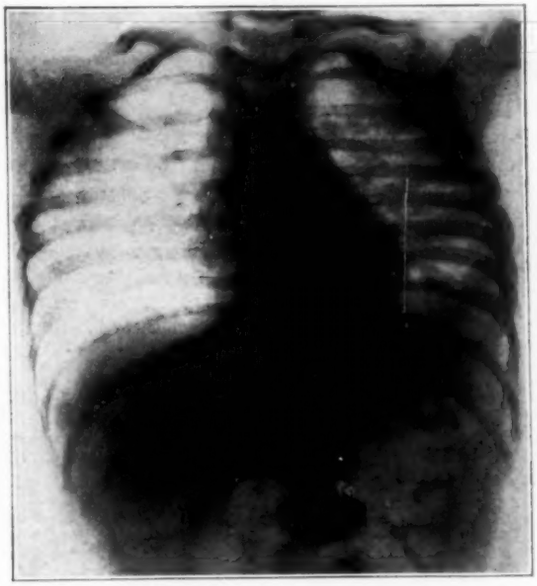

Fig. 3 (case 2).—Faint suggestion of a denser abscess shadow in the cardiac shadow indicating a possible Pott's disease in chest plate.

general roentgenogram of the chest leaves no doubt that a Pott's abscess casting a denser shadow posterior to the cardiac outline is being dealt with. An interesting point is noted in that the outline of the Pott's abscess is at a higher level than that of the involved vertebrae (eleventh and twelfth thoracic),

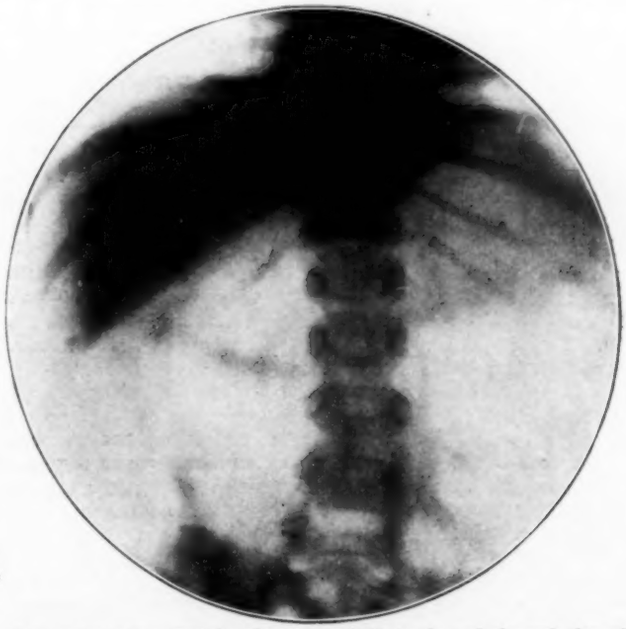

Fig. 4 (case 2).—Definite abscess at ninth, tenth, and eleventh thoracic vertebrae in spinal plate.

being in line with the heart shadows which normally in a vertical direction posteriorly occupy the spaces corresponding to the sixth, seventh, eighth and ninth thoracic vertebrae or, according to Deaver and to Gray, the fifth, sixth, seventh, and eighth thoracic vertebrae. Ordinarily the abscess gravitates downward and casts a shadow in the vicinity of the first lumbar vertebra, or perhaps it follows the sheath of the psoas

muscle and presents itself at the thigh. The horizontal lying down posture of the patient during the long months of incapacitation may account for the peculiar location of the abscess at a level above the diseased vertebrae.

CASE 2.—E. G., a child, aged 2 years, with tuberculous parents, was admitted to the preventorium of the National Jewish Hospital with a diagnosis of tuberculosis of the spine. A roentgenogram of the chest showed bilateral mottling

Fig. 5 (case 3).—Appearance three and one-half months prior to figure 6: early spinal abscess of lower thoracic vertebrae in cardiac shadow; only after the spinal abscess was revealed at postmortem were the plates reexamined and the observations in figures 5 and 6 seriously considered in chest plate.

extending from the apexes to the hilum, while the roentgenogram of the spine disclosed a fusiform abscess about from 5 to 6 cm. in diameter extending from the eleventh to the twelfth thoracic vertebrae. The roentgen-ray data in this case are interesting because in the plate of the chest there is little to suggest an abscess of the spine, since the shadow cast by the heart obscures that of the spinal abscess. In this respect this case differs from case 1, in which the oblique roentgenogram did not demonstrate the Pott's abscess, being only faintly suggestive, while an anterior posterior chest plate gives undoubted evidence of a Pott's abscess, posterior to the cardiac shadow.

CASE 3.—S. C., a merchant, aged 31, married and with a negative family history, was admitted to the National Jewish Hospital, Dec. 6, 1923. The past history was uneventful. The onset of disease occurred with a laryngitis following a cold. The condition was diagnosed as tuberculosis in 1921. About three months prior to the patient's admission to the hospital, an operation was performed under ether anesthesia for rectal fistula; following the operation, the patient's cough and expectoration increased and at times the sputum was blood streaked. Physical examination on admission to the hospital disclosed a bilateral involvement of both lungs manifested clinically by moist râles to the level of the seventh rib. Laryngeal examination showed infiltration of the vocal cords (false) and the ventricular bands, with healed ulceration of the epiglottis. The cardiac signs were negative except for an accentuated pulmonic second sound. The sputum was positive for tubercle bacilli, and the urine contained albumin and granular casts. The blood Wassermann test was negative. Roentgenologic examination of the chest confirmed the clinical conclusions in demonstrating extensive infiltration of both lungs to the bases of the lower lobes. The heart shadow was of particular interest in that at the base of the heart, about 1.5 cm. internal to the left border, there was seen a denser circular shadow partially obscured by the heart shadow and spine behind, but nevertheless quite definite in outline. While a question was raised as to the significance of this inner circular shadow outline, no importance was at the time attached to it. On theoretical grounds, the following explanations were advanced: (1) pericarditis with effusion; (2) aneurysm of the descending aorta; (3) calcification of the pericardium, and (4) tumor of the mediastinum.

The distinctness of the cardiac tones and lack of increase in total cardiac shadow excluded the possibility of pericarditis with effusion, while the absence of pulsation and also the lack of total increase of the heart shadow made it seem quite unlikely that aneurysm of the descending aorta existed. In calcification of the pericardium as shown by Youmans,[1] the cardiac outline presents two distinct shadows, the inner one formed by the cardiac musculature, while the outer one, formed by the calcified pericardium, is quite unique in showing a thickened outer border. The diagnosis in the foregoing case was reserved for the autopsy, when a Pott's abscess about 4.5 cm. in diameter was found at the level of the ninth thoracic vertebra, in line with the descending aorta, pointing anteriorly and corresponding to the inner circular shadow seen on the roentgen-ray plate between the outer left border of the heart shadow. Evidence of kyphosis was not seen at autopsy, and symptoms referable to the spine during life were not found. The remaining organs, including the kidneys and intestines, showed evidence of tuberculosis macroscopically and the spleen on examination of microscopic sections.

COMMENT

Tuberculous abscess of the spine occasionally presents to the clinician an extremely difficult diagnostic problem. In the usual easily recognized case, the abscess tends to produce a fusiform roentgenographic shadow situated in the vicinity of the spine, as was demonstrated by Wessler and Jaches.[2] Owing to their position, these abscesses are usually partly or wholly obscured by the heart shadow in the ordinary chest roentgenogram and are commonly not seen in their entirety if at all. While the chief assurance of their recognition depends on careful physical and roentgenologic examination of the spine in every case, in obscure cases these methods may be of little avail and then a

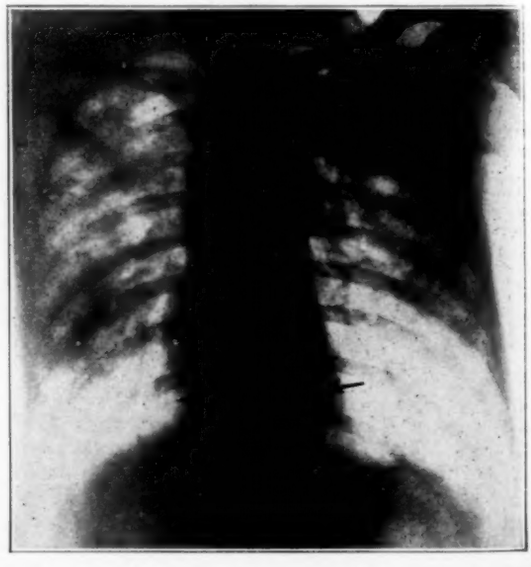

Fig. 6 (case 3).—Appearance three and one-half months after figure 5: definitely outlined fusiform abscess shadow in cardiac shadow in chest plate.

critical examination of the heart shadow in the ordinary chest plate may still present the clue to the presence of a Pott's abscess, as in one of the cases cited, even when local and general signs are entirely lacking, and sug-

1. Youmans, J. B.: Calcification of the Pericardium, Ann. Clin. Med. **6**: 1032-43 (June) 1926.
2. Wessler, H., and Jaches, L.: Clinical Roentgenology of the Diseases of the Chest, Troy, N. Y., Southworth Company, 1923.

gestion of tuberculous disease of the vertebrae did not exist. Just such cases make it appear advisable that the roentgenologic shadows lying within the cardiac shadow be given careful analytic consideration in every case of tuberculosis.

CALCIFICATION OF THE OVARY

REPORT OF CASE *

REED O. BRIGHAM, PH.D., M.D.
TOLEDO, OHIO

This case is reported because of its interest and because of the comparative infrequency of similar cases. Bost,[1] in 1923, reported a similar case of a calcified ovary except that the specimen was larger and bone was not present. He also mentioned a similar case reported by Dickens.

Fig. 1.—Specimen as removed, with fibrous attachment.

Moschcowitz,[2] in 1916, reported five cases of the rare lesion of calcification of the ovary and made a study from a morphologic point of view. He stated that the process is analogous to the physiologic endochondral ossification, the difference being that, instead of cartilage, the matrix is hyaline connective tissue infiltrated with lime. He reviewed the theories concerning angiogenesis and presented several photomicrographs. He found some ossification and summarized by saying that ossification does not occur without preliminary calcification, and calcification occurs only in dead tissues.

Curtis,[3] in 1922, reported a case before the Chicago Gynecological Society in which case he found the ovary completely calcified; it was composed entirely of bone and was hollow in the center. Ivens [4] describes a case of a calcified left ovarian dermoid. This review does not include the cases in which there were deposits of lime in the ovary, which have occasionally been observed and reported by surgeons and pathologists.

REPORT OF CASE

History.—R. S., aged 28, married four years, had not had any pregnancies; the family history was negative, and the personal history to the age of puberty did not have any bearing on the case. The menses began at the age of 16; they were regular every twenty-eight days and of five days' duration. Six years before the patient was in a slight automobile accident, and since that date she had had some pain in the right side. In May, 1923, she had a severe attack of pain in the back at the regular menstrual period, and since that time there had been a continual pain in the back; if she stood very long it became severe, and she would feel faint. There was also pain on coitus. The past two years she had had a leukorrheal discharge, which was not relieved by douches or glycerin tampons.

Examination.—The patient's general appearance was good. The height was 5 feet 6 inches (168 cm.) and the weight 126 pounds (57 Kg.). There was a slight tenderness over the right lower abdominal quadrant, but palpation did not reveal a mass. Vaginal examination revealed a mass in the posterior culdesac, the palpation of which caused a great deal of pain. The uterus was small. The urinalysis and the blood count revealed nothing abnormal.

Operation and Result.—The appendix was resected but did not show any abnormality. The left ovary was normal in size, and other than a small cyst the size of a kidney bean did not present any pathologic change. The left oviduct was slightly edematous and inflamed, but resection was not indicated. The duct was patent. The uterus was infantile in type. There was a congenital absence of the right oviduct. The right ovary was about 1 inch (2.5 cm.) in diameter (fig. 1), irregular in surface and hard as stone. It was bound down by adhesions to the posterior wall of the uterus near the cervix, lying in the posterior culdesac. The blood supply was practically absent.

Pathologic Report.—The specimen was oval in outline, encapsulated, irregular and smooth, of a light gray mottled with yellow, and with a few short fibrous attachments. It had the normal size, shape and appearance of an ovary, but was of stonelike hardness. It was sectioned by Dr. A. H. Schade, who found in one end a small dermoid cyst about the size of a large kidney bean, containing hair, sebaceous matter, bone and some soft tissue. Other osseous tissue was not found in the rest of the mass. Dr. A. Hartman examined this specimen fluoroscopically to determine whether there was present any dentin tissue, but he found only small spicules of osseous tissue in the dermoid. The specimen was of uniform hardness except for the soft tissue found in the dermoid. Figure 2 shows the cut section.

COMMENT

Calcification is not an uncommon pathologic phenomenon and it has been described in various body tissues, but it is apparently not so common in the ovary, as I have been able to find only nine previously reported cases in the literature. There does not seem to be a precise and satisfactory chemical explanation for the deposit of calcium. However, it is common to find calcium deposited in tumors whose circulation has become deficient or in conditions, such as tuberculous glands and pleural thickenings, in which the blood supply has been cut off, so that the tissues are dead or inert.

Fig. 2.—Specimen sawed open, showing dermoid in upper portion.

In the case described above there was apparently only a small blood supply, and as there was a congenital absence of the oviduct on the right side, there may have been further lack of development of the ovary and its blood supply which may have led to the calcification. In the case reported by Bost, there was a marked enlargement, while in my case there was none.

The patient reported two months after the operation and is feeling very well. There has been cessation of pain in the back, and the leukorrhea has entirely ceased. She also states that she has more ambition and less discomfort than she has had for the last three years. Her entire convalescence has been uneventful and rapid.

1320 Monroe Street.

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* From the Robinwood Hospital.

1. Bost, T. C.: Calcification of the Ovary, J. A. M. A. **80**: 912-913 (March 31) 1923.
2. Moschcowitz, Eli: The Relation of Angiogenesis to Ossification, Bull. Johns Hopkins Hosp. **27**: 71-78 (March) 1916.
3. Curtis, A. H.: Completely Calcified Ovary, Surg. Gynec. Obst. **34**: 686, 1922.
4. Ivens, F.: Calcified Left Ovarian Dermoid, Lancet, October 23, 1909; abstr. J. A. M. A. **53**: 1782 (Nov. 20) 1909.

ULCERATION OF THE CORNEA DUE TO BACILLUS PYOCYANEUS*

W. T. GARRETSON, M.D.
AND
K. W. COSGROVE, M.D.
DETROIT

As the infection of the cornea with *Bacillus pyocyaneus* is comparatively rare, an epidemic of sixteen industrial cases seems worth reporting.

Bacillus pyocyaneus, like many micro-organisms, is occasionally found in a purely saprophytic state;[1] Koch, in earlier studies, declared it to be an organism incapable of playing a pathogenic rôle. However, in certain strains, marked virulence has been noted. Infection of surgical wounds, otitis media, urinary infections, meningitis and pneumonia are the most frequent. The first eye case was reported in 1891 by Sattler.[2] This followed a lacerating injury of the cornea due to a flying foreign body. The same author reports a similar case in 1892 due to injury from a wood splinter. In both these eyes the infection went on to panophthalmitis necessitating enucleation. Haab,[3] in 1897, and Gallenga,[4] in 1898, each reported a similar case. The case of Bietti,[5] in 1899, is the only one reported in which visible evidence of injury to the cornea was not noted. The injury was a contusion caused by the blow of a fist. The first case in which the eye was not lost was reported by Stoewner[6] in 1901. Agnes McNab,[7] in 1904, described a case seen six days following the onset of the infection. This case resulted in hypopyon and loss of the eye. Mauersberg,[8] in 1910, reported a case in which the injury was due to a small piece of brick. Enucleation was necessary to check the infection. He produced, in rabbits, an identical infection by inoculating the cornea with the bacillus isolated in his case. Krinitski,[9] in 1911, reported a case and stated that not all cases may show the bacillus with Gram's stain. Axenfeld,[10] in 1917, discussed a case in his clinic without making a definite statement regarding any injury, and he emphasized the marked toxic action of the rather rare infection.

The present epidemic of sixteen cases originated in the same industrial plant. First aid care and treatment were given, including removal of adherent foreign bodies, foreign body stains and loose foreign bodies from the cornea and conjunctival sac. Irrigation with a 4 per cent boric acid solution and instillation of 10 per cent neosilvol followed removal in each case. A pad was placed over the injured eye for twenty-four hours. The ulcers developed from one to four days following the injury. In this series, three cases did not present an abrasion of the cornea which could be recognized macroscopically. The remaining injuries were not of a penetrating nature. Small particles of emery or débris were adherent to the cornea, which resulted in loss of epithelium. In rabbits infection of the cornea was not possible by inoculation of an abrasion produced experimentally. To obtain similar serious sequelae, the bacteria had to be injected between the layers of the cornea. In an attempt to discover the source of the infection, a careful survey of the positions held by the men was made. Only two were working in the same part of any building (foundry). Another two men were from the same department. The remaining men were scattered over the plant in widely separated buildings. The only place where all the men had congregated was the first aid hospital. A careful survey made here did not unearth any definite focus. Cultures

Bacillus Pyocyaneus Ulcer Cases

Patient	Side	Etiology	Incubation, Days	Bacteria	Times Cauterized	Days' Stain		Hospital Stay	Time Off Work	Complications	Vision on Discharge	Final Results
						Activity, Days	with Fluorescein					
1	Right	Emery	3	Negative	2	10	17	18	20	.....	20/30	Thin scar
2	Right	Foreign body	1	Staphylococcus albus	1	3	24	45	68	Tuberculous inguinal adenitis	Less than 1/10	Thick scar
3	Left	Foreign body	2	B. pyocyaneus	2	18	30	33	37	.....	1/10	Moderate scar
4	Right	Foreign body 24 hours	2	Staphylococcus albus	1	9	15	16	19	.....	20/30	Invisible scar
5	Left	Foreign body 24 hours	2	Negative	4	20	30	35	38	Cornea perforated	Less than 1/10	Thick scar
6	Left	Foreign body	?	B. pyocyaneus	1	12	17	21	26	.....	6/10	Thick scar
7	Left	Foreign body stain	1	B. pyocyaneus	1	11	21	43	46	.....	Less than 1/10	Thick scar
8	Right	Dust	1	Negative	2	3	14	23	30	.....	20/30	Thin scar
9	Left	Foreign body stain	2	Staphylococcus aureus	1	11	20	21	27	.....	20/30	Dense lower scar
10	Left	Foreign body 24 hours	4	Staphylococcus albus	2	7	12	13	19	.....	6/10	Thin scar
11	Right	Foreign body 24 hours	3	B. pyocyaneus	3	10	21	29	31	.....	Less than 1/10	Thick scar
12	Left	Foreign body	2	Negative	1	8	23	24	31	.....	Less than 1/10	Thin total scar
13	Right	Foreign body 24 hours	2	Negative	1	53	Enucleated 65 days	75	85	Cornea perforated	Nil	Eye enucleated
14	Left	Foreign body stain	2	B. pyocyaneus	2	8	12	13	16	.....	20/20	Thin scar
15	Right	Foreign body 24 hours	3	B. pyocyaneus	1	10	12	67	75	.....	20/30	Thin scar
16*	Left	Dust	3	B. pyocyaneus	1	10	25	67	75	Cornea perforated	Nil	Dense total scar

* Same patient as 15.

* From the department of ophthalmology and otolaryngology, Henry Ford Hospital.

1. Lartigan, A. J.: B. Pyocyaneus as Pathogenic Factor in Human Pathology, Philadelphia M. J., Sept. 17, 1898.
2. Sattler, H.: Ueber B. Panophthalmitis Bericht, Versamml. Ophth. Gesellsch. Heidelberg. **21:** 201, 1891; 1892, p. 156.
3. Haab, O.: Hypopyonkeratitis Hervorgenufer durch den B. pyocyaneus, Arch. f. Ophth. (von Gräfe's) **44:** 201, 1897.
4. Gallenga, C.: Cheratopopio de Bacilli Piocianico, Ann. di ottal. e. clin. ocul. **27:** 133, 1898.
5. Bietti, A.: II Bacillo Piocianico nel cheratopopio, Ann. di ottal. e. clin. ocul. **38,** 1899.
6. Stoewner, cited by Mauersberg (footnote 8).
7. McNab, Agnes: Ulceration of the Cornea Due to B. Pyocyaneus Infection, Ophth. Rev. London **23:** 65, 70, 1904.
8. Mauersberg: Hypopyonkeratitis Hervorgerufen durch den B. pyocyaneus, Ztschr. f. Augenh. **24:** 299, 310, 1910.
9. Krinitski, A. D.: Ulcus Corneae Caused by B. Pyocyaneus, Vertnik oftagneologii Odessa, 1911, p. 945.
10. Axenfeld, T.: Hypopyonkeratitis Produced by B. pyocyaneus, Deutsche med. Wchnschr. **43:** 183, 1917.

taken of the boric acid used were negative. That *Bacillus pyocyaneus* will live in 4 per cent boric acid was proved experimentally. We have therefore to assume that the boric acid was the most likely focus. Careful surgical technic and cleanliness were instituted with no further cases developing.

At the time of our initial contact, between three and seven days from the date of injury, all patients complained of lacrimation, photophobia and pain. Examination revealed deep sloughing ulcerations of varying sizes. The base of the ulcer was covered with exudate and débris. Around the infected areas a ring of clouding of the cornea existed extending about 2 mm. The exudate, present in large amounts, was of a fibropurulent nature with a slight grayish tinge. Circumcorneal injection associated with mild iritis was present in some cases. All cases showed marked hyperemia of the bulbar and palpebral conjunctiva. The dirty appearance of the ulcers associated with the large amounts of exudate differentiated them from the ordinary pyogenic or catarrhal ulcerations. Figures 1 and 2 show typical *Bacillus pyocyaneus* ulcerations in rabbits' eyes at twenty-four hours and four days. Figures 3, 4 and 5 show the three stages of the process, active, healing and scar.

Fig. 1.—Lesion induced by injecting B. pyocyaneus between corneal layers: fibrinopurulent conjunctivitis after twenty-four hours.

Primary treatment consisted of actual cautery, by which means the overhanging edges and sloughing bases were sterilized. This was immediately followed by 68 per cent phenol (carbolic acid) neutralized in two or three seconds with 95 per cent alcohol. The eye was then irrigated with boric acid. An ointment of a mercury salt was instilled into the conjunctival sac before the patient returned to his room. In several cases this treatment had to be repeated one or more times before the activity was halted.

The eyes were treated subsequently with irrigations of 4 per cent boric acid solution every one or two hours. This was carefully done with the intention of cleansing the base of the ulcer and freeing the cornea from reinfection by its own exudate. The mercury preparation was instilled into the conjunctival sac after each irrigation. A 1 per cent solution of mercurochrome-220 soluble was used three times a day. Cold compresses were applied by the patient himself continuously. As in all eye infections, atropine was used in a 1 per cent solution three times a day.

When the activity of the ulcer decreased, thereby decreasing the exudate, the boric acid and the mercurochrome were discontinued to prevent secondary irritating effects. The course of the ulcers varied with the size and length of time before radical treatment was instituted. Activity varied from three to twenty days, as shown in the table. When the activity subsided a period of repair followed, lasting from four to fifteen days, varying directly with the destruction. During the latter period, mercuroform ointment was the only medication.

In three cases, perforation of the cornea occurred within from seven to eleven days. A conjunctival flap was sutured over the cornea, with complete healing in two cases. In the remaining case, because of persistent fistula and recurring uveitis, the eye was enucleated. The following are two typical case reports.

R. B., a man, had an adherent foreign body removed from the left cornea, October 3. The following two days, treatment was given at the first aid station. October 7, marked conjunctivitis with ulceration of the cornea was noted, and the patient was referred to us. Examination revealed an ulcer of the cornea at about 3 on the clock dial, from 2 to 3 mm. in diameter, with a sloughing base. There was marked conjunctivitis with an exudate. Cauterization was done, October 7 and 10.

Fig. 2.—Lesion resulting from intracorneal injection of B. pyocyaneus: appearance after ninety-six hours, showing complete digestion of the cornea.

October 12, the activity of the ulcer had been arrested, but the denuded area stained with fluorescein covering about half of the cornea.

October 17, all medication, excepting the mercury preparation and atropine, was discontinued.

October 20, the eye did not take any stain when fluorescein was used, and the patient was discharged from the inpatient department. The temperature range was from 98 to 100.

A culture yielded *Staphylococcus albus* in forty-eight hours. The urine and the Wassermann reaction were negative.

The patient returned to work, October 26, with vision of 6/10.

January 14, the vision was 20/40. There was a very thin transparent scar covering the inner half of the cornea.

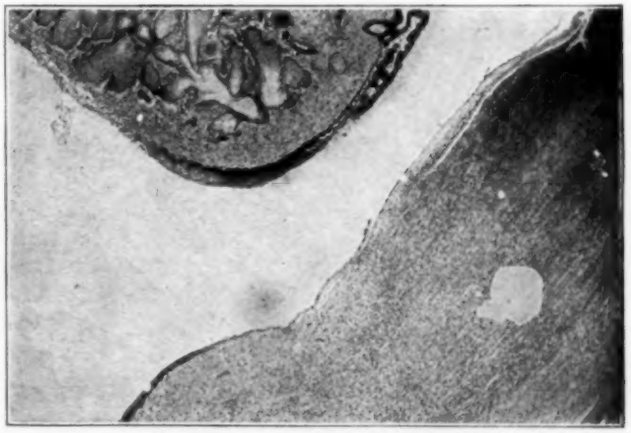

Fig. 3.—Active stage: marked infiltration of cornea and lids with separation of epithelial layer of cornea.

In the second case, the patient reported to the first aid station, October 3, stating that dust flew into his eye the preceding day. An adherent foreign body was removed from the left eye, a ring stain remaining. A loose foreign body was removed from the right eye, and the eyes were treated, October 4 and 5.

October 6, ulceration with conjunctivitis developed in both eyes. When examined at the hospital, the patient had a temperature of 100. In the right eye the ulceration was 1 mm. in diameter, at 8 on the clock dial; the base was dirty and

sloughing. In the left eye the ulcer was 4 mm. in diameter in the central portion of the cornea. Hypopyon was present. There was definite circumcorneal injection with a boggy and discolored iris. Both eyes were cauterized on this date.

October 9, there was some exudate in the base of the right eye. In the left eye there was perforation of the cornea.

October 12, the right eye was inactive; it stained with fluorescein. The bulbar conjunctiva of the left eye was sutured over the cornea.

November 2, the right eye did not stain with fluorescein. In the left eye the anterior chamber reformed; there was considerable reaction in the eye.

November 12, neither eye took the stain.

December 12, the patient was discharged.

Both eyes yielded pure cultures of *Bacillus pyocyaneus.* The urine was found to be normal. The Wassermann reaction was negative.

December 19, the patient returned to work.

The final vision, recorded February 10, was: right eye, 20/30, with a thin scar at 8 o'clock; left eye, light perception only, with a thick scar over the whole cornea.

Cultures taken from thirteen of the eyes before cauterization gave the following results: six cases with pure cultures of *Bacillus pyocyaneus;* one case with *Bacillus pyocyaneus* and *Staphylococcus albus;* three cases with *Staphylococcus albus* in pure culture, and one case of *Staphylococcus aureus.* The remaining two cultures were negative. Despite the fact that *Bacillus pyocyaneus* was not found in all cases, the gross pathologic condition was identical.

Edna Jackson and F. W. Hartman have conducted several groups of experiments with the bacteria isolated from this series. Similar eye infections were caused in rabbits by the injection of the organism between the layers of the cornea. The bacteria were recovered from the resulting ulceration. Stock cultures of *Bacillus pyocyaneus* failed to produce similar results. The cultures of staphylococci were next used without any spreading infection resulting. However, when the

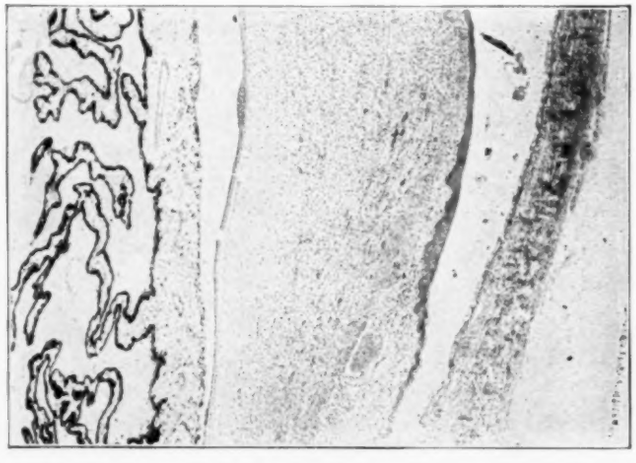

Fig. 4.—Chronic stage of the lesion: The corneal layers are diffusely infiltrated and vascularized.

staphylococci and a broth filtrate of *Bacillus pyocyaneus* was used, sloughing, spreading infections were produced similar to those caused by *Bacillus pyocyaneus* in pure culture. The production of immune bodies was studied as the next step. Saline suspensions of dead bacteria and broth filtrates were used. Following vaccination by either of these methods, severe infections were not seen, a small pinhead opacity being the only end-result. Treatment of induced ulceration of the eye with an antiserum was successful only in the case in which the serum was obtained from a rabbit immunized with the saline suspension of dead bacteria.

The men were able to return to work in from sixteen to eighty-five days. At the end of four months the men were recalled and their vision was taken. Six of the sixteen eyes had vision between 20/20 and 20/30. In four other cases, vision useful in viewing large objects was obtained (from 0.4 to 0.1). In the remaining five cases, vision was less than 1/20. In the sixteenth case the eye had been enucleated.

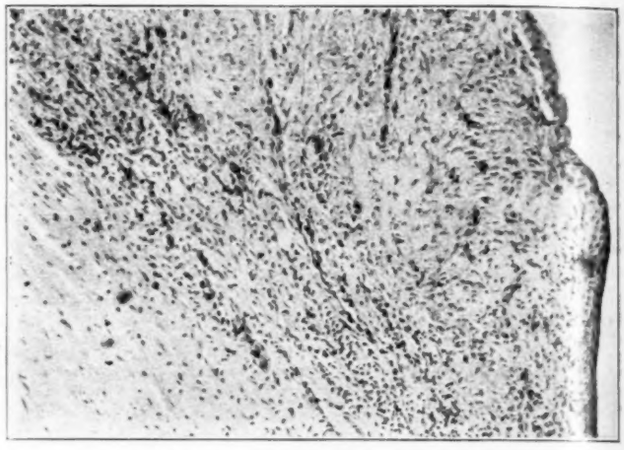

Fig. 5.—Terminal stage, showing dense scarring and cellular infiltration.

In connection with this epidemic, a case from the same plant was seen in consultation by one of us. The injury had occurred at approximately the same time as had those under our observation. This patient had been treated with mild antiseptics and frequent irrigation for three or four days. At the time of our examination, perforation of the cornea with early panophthalmitis was noted. Evisceration was done.

CONCLUSIONS

1. *Bacillus pyocyaneus* in virulent strains may produce in an already injured eye severe ulceration of the cornea. These ulcers tend to spread rapidly, often resulting in the loss of an eye.

2. Ulceration of the cornea due to *Bacillus pyocyaneus,* when secondarily infected with *Staphylococcus albus* or *aureus,* causes a more severe destruction than staphylococci alone can produce. *Bacillus pyocyaneus* may not in that case be found in cultures of the exudate. We might assume, then, that many of the severe corneal infections were primarily infected with *Bacillus pyocyaneus,* although that organism was not shown in the culture.

3. The resistance of the human eye to *Bacillus pyocyaneus* is less than that shown by rabbits.

4. Radical treatment, thermocautery and chemical cautery, is necessary as early as possible to check the infection. Scars following ulceration due to this infection tend to be more transparent than those resulting from ulcerations due to pneumococcus. In cases treated within four days of infection, 38 per cent resulted in practically normal vision.

5. Vaccination is effective in producing an immunity to *Bacillus pyocyaneus.*

6. A serum for the treatment of *Bacillus pyocyaneus* infection may be produced by the injection of animals with the saline suspension of killed bacteria. With the use of this serum, severe infection may be arrested.

CLINICAL MANIFESTATIONS OF AN ENLARGED THYMUS

DIAGNOSIS AND TREATMENT *

E. A. MORGAN, M.B.; A. H. ROLPH, M.B.
AND
ALAN BROWN, M.B.
TORONTO

It is our intention to present some of our observations and conclusions regarding the diagnosis and treatment of thymic enlargement, without discussing or reviewing the literature. Before presenting our facts it might be wise to consider some of the accepted information regarding this organ.

It may be stated at the outset that in spite of the vast amount of clinical and experimental work that has been done in the last few years, there still remains doubt as to the exact place that the thymus occupies in the bodily economy. Its anatomy is not fixed nor is its physiology clearly determined. It is not even possible at the present moment to state that it belongs to the ductless glands. On one side, it is held that the thymus is essential for growth and development, while the other holds that no developmental changes follow its removal; yet certain diseases of this gland are of far reaching importance.

It seems certain that the thymus is a lympho-epithelial organ in which two types of structure coexist in the most intimate relationship. An argument in support of the lymphoid nature of the small thymus cells is the fact that one effect of the roentgen ray on the thymus is the disintegration of these cells. This fact alone has been shown in our clinic in at least two instances in which we were able to examine the thymus post mortem after roentgen-ray therapy.

The weight of the gland varies within certain limits. From birth to 2 years of age the average weight is from 7 to 10 Gm. In our clinic we have considered every-

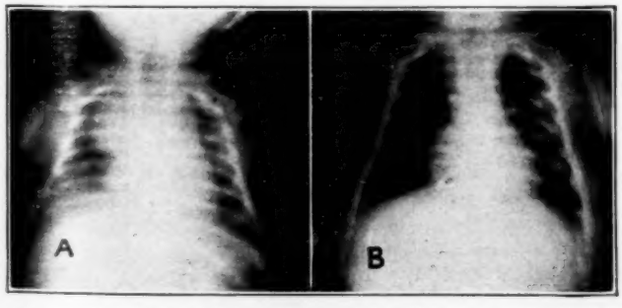

Fig. 1.—Large bulbous form of thymus: *A*, before treatment; *B*, after treatment.

thing over 10 Gm. as being abnormal, and certainly glands weighing from 20 to 30 Gm. should be considered hyperplastic. By many the gland is believed to have reached its greatest growth at 2 years while others contend that there is progressive growth to puberty.

E. R. Haskins closes a critical summary of existing views with reference to the function of the thymus with the following statement:

> Whatever be the real function of the thymus, certain it is that its production of an internal secretion has not been proven. The evidence in favor of such a theory is but circumstantial at best and very meager. It is equally difficult to prove that the thymus does not produce a secretion, but the burden of proof is upon those who support the former theory. A statement is not true because it cannot be proven untrue. . . . A more logical theory of the significance of the thymus is that it functions as a lymphoid organ in infancy and childhood when large numbers of lymphoid cells and leukocytes are needed to combat infection. The large numbers of leukocytes and especially lymphocytes in the blood during this period of life indicate that these cells are relatively important to the organism. The question of the relative loss of thymic tissue and other lymphoid tissue all over the body which begins at birth and progresses throughout life must be bound up with the question of immunity from or resistance to infections that occur in every animal.

It is a fundamental law of biology that bodily structures, the need for which decreases, tend themselves to

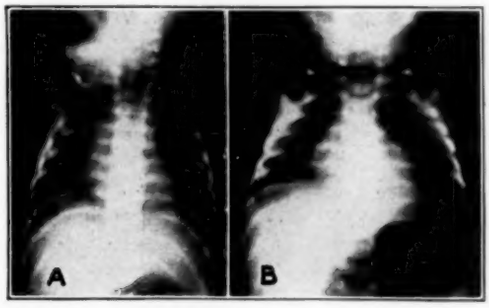

Fig. 2.—Columnar form of thymus, causing severe attacks of syncope: *A*, before treatment; *B*, after treatment.

atrophy. This statement is of interest to us because in two instances, following treatment of an enlarged thymus in children with mild upper respiratory infections, there resulted a severe overwhelming involvement which promptly proved fatal.

Recent researches have shown that the thymus is affected by various infections and by conditions disturbing the general nutrition of the body. In acute diseases, exanthems, pneumonia, nephritis and starvation there occurs a pathologic involution which may not persist. Thus, in the course of one of the acute infectious diseases, the thymus may temporarily be reduced to one fifth or one sixth of its normal size.

It is not our intention to discuss the condition described by Paltany as "status lymphaticus," but rather the anomaly of the thymus which exists without the association of the constitutional anomalies of the "status lymphaticus." It is undoubtedly true that in many instances an enlarged thymus produces no changes whatever; in some, however, we have seen produced a series of symptoms to be described below.

In a few instances thymic enlargement may be due to congestion resulting from acute infection or circulatory disturbances. (It should be borne in mind that terminal fibers of the vagus supply the thymus.) The primary cause may be sought in any infection, intoxication or disturbance of metabolism. The enlargement of the thymus is, therefore, a secondary process in the nature of a compensation.

CLINICAL MANIFESTATIONS

Fifty-four cases have been selected for study from personal and hospital records; of these, twenty-eight were males and twenty-six females. In two cases, enlargement of the thymus was discovered accidentally and was unaccompanied by symptoms, but in the remaining fifty-two attention was directed toward the gland by the presence of suggestive manifestations.

* From the Department of Pediatrics and the Hospital for Sick Children.
* Read at the fourth annual meeting of the Canadian Society for the Study of Diseases of Children, Gananoque, June 12, 1926.

These have been tabulated in the order of their relative frequency. Although the majority of patients manifested only one suggestive symptom, there were a number of instances in which two or more symptoms were striking enough to justify placing these cases in more than one group.

Holding-Breath Spasms.—This complaint was recorded in twenty-nine, or more than half the total number of cases, and must be considered the most frequent manifestation of thymic disturbance. The attacks are characteristic and are readily recognized by the parents' description of them: During a paroxysm of crying occasioned by an injury or an attack of temper the child holds its breath, becomes cyanotic and usually falls to the ground. The suffocative attack is at times accompanied by a transient loss of consciousness and may be followed by a period of listlessness, semistupor and pallor of some minutes' duration. The attacks may be infrequent, i. e., once a month, or they may occur several times in one day.

They are apt to be confused with petit mal seizures and at times the differentiation between the two conditions is very difficult. A case in point is as follows:

A child, aged 18 months, perfectly well until 10 months of age, had had since that time intermittent seizures which were characterized by cyanosis and loss of consciousness, without twitching movements and without premonitory symptoms. The spells, as a rule, followed a fall or some minor injury. The condition was mistaken for epilepsy for several months until enlargement of the thymus was suspected, confirmed by roentgen ray, and treatment begun. There has been no recurrence of symptoms for fourteen months.

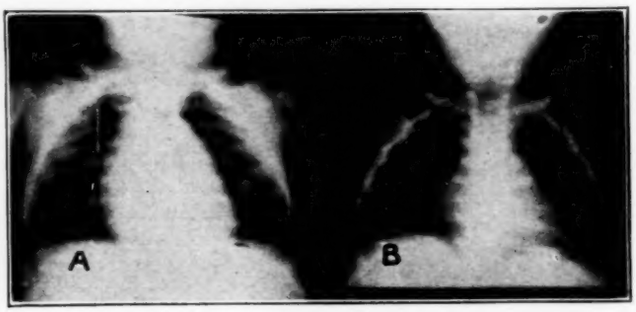

Fig. 3.—Pedicled form of thymus, causing severe attacks of cyanosis; *A*, before treatment; *B*, after treatment.

The results of treatment in this type of case have been very striking, twenty-seven patients becoming symptom free after two or three treatments. In two instances, cessation of attacks was not complete when the patients were last seen, but there had been marked improvement.

Syncope.—Nine patients are included in this group, which is a very interesting one. A case-history illustrative of this manifestation is as follows:

An apparently healthy robust baby, aged 4 months, was found by its mother unconscious in its carriage in the sitting position. The child was blanched, respirations were almost imperceptible, and the body and extremities were limp and apparently lifeless. The condition was witnessed by one of us an hour later when consciousness was beginning to return. On examination, a broad area of dulness was detected under the upper part of the sternum, and a roentgen-ray examination showed an unusually large thymus. This case proved to be a particularly persistent one both as far as the size of the gland and the continuation of symptoms were concerned.

The clinical picture shown by all the patients in this group corresponded very closely to that described above. The periods of unconsciousness lasted from a few minutes to as long as four hours. In two instances they followed typical holding-breath spasms. These attacks of prolonged syncope are without doubt the most terrifying and probably the most serious manifestation of thymic disturbance.

Cyanosis.—Under this heading are included eight cases in which marked cyanosis was not associated with typical holding-breath spasms. In three, the cyanosis dated from birth and was persistent, although the degree of intensity varied. In the remaining five, blueness of the face or extremities was attended by a suffocative attack which lasted for a minute or more, and was unaccompanied by crying. These sometimes occurred during sleep, the mother's attention being directed to the baby's crib by a "strangling noise."

Seven of the eight patients responded to roentgen-ray treatment: the other child died on the tenth day during a very severe attack. One treatment had been given in this case and had been followed by a temporary but striking amelioration of the symptoms.

Cough.—The relationship of this symptom to thymic enlargement is not so clearly defined as are the three previously described. There is no doubt, however, that a continual hoarse cough may be the only evidence of thymic derangement. Proof of the association between the two rests in (1) the failure to find any other cause for the cough, (2) the demonstration of an enlarged gland, and (3) the relief of symptoms following roentgen-ray therapy. Of the seven cases of this nature, persistent hoarse cough was the principal complaint in four, and in the remainder it was of secondary importance. All received roentgen-ray treatment; in five, the cough completely disappeared, in one, improvement was observed, and in one there was no perceptible improvement. One case which was originally included in this series was discarded since the evidence was inconclusive, but it serves to depict the most common error one is apt to make in this connection:

A baby, aged 6 months, with a hoarse, spasmodic cough of six weeks' duration, was roentgenologically examined by a country physician, who discovered an abnormally broad thymus shadow. Four treatments were given with no relief of symptoms. Following adenoidectomy, however, the cough completely disappeared.

Noisy Nasal Breathing.—In this group are included six cases showing a manifestation the importance of which has hitherto been overlooked. A striking illustration of it is presented in the following case report:

A healthy nursing infant contracted at the age of 2 months what was thought to be a mild coryza, characterized by nasal obstruction and a slight serous nasal discharge. The usual measures were employed for its relief, but the cold persisted for two or three weeks. After a short interval of freedom, symptoms recurred and continued until 4 months of age. The snorting respiration could be heard from the next room and the infant's mouth was constantly open. Adenoid tissue was suspected, and this diagnosis was confirmed by an otolaryngologist who was consulted. Preparations were made for operation, but the day before this was to be performed a routine examination of the chest revealed a broad area of dulness in the thymus region. A roentgen-ray examination was made, and a very large thymus demonstrated. The noisy nasal breathing disappeared rapidly following two roentgen-ray treatments.

It is difficult to explain the connection between this sign and enlargement of the thymus, but the uniformly good results that have attended roentgen-ray treatment

leaves little room for doubt that there is a very close association.

Choking Attacks.—The five cases in this group might perhaps have been included under "cyanosis," since the attacks are somewhat similar. In the cases under consideration, however, the cyanosis was of very short duration; the attacks came on during a feeding, and the mother's description was that the child "swallowed some milk the wrong way," choked, became blue, and had to be turned over and slapped on the back before it recovered. It would be absurd to suggest that all choking spells in babies are due to persistent thymus, but some undoubtedly are; and since it is a manifestation that might easily be overlooked, it was felt that placing it in a group by itself would serve to emphasize its importance. In one instance of true thymic death in this series, the information was obtained after death that the baby had had frequent choking attacks while taking its bottle. Had these been reported and their significance recognized, the child would still have been alive.

Other Manifestations.—Typical thymic asthma commencing at or shortly after birth, and characterized by marked dyspnea, prolonged and difficult inspiration, retraction of the soft parts on inspiration, and cyanosis, was present in only three cases. In one, the clinical picture was somewhat confused by the occurrence of tongue-swallowing, which helped to aggravate the dyspnea. This infant recovered completely after roentgen-ray treatment. In another instance, the attacks of cyanosis and dyspnea were precipitated by hyperextending the baby's head or by doubling up the body.

Rapid, panting respiration was another symptom in four cases. In one of these, thymus enlargement recurred several times after treatment and the mother observed that this symptom heralded the recurrence.

Nervous manifestations, such as sleeplessness, restlessness and irritability, were reported in three instances to have disappeared following roentgen-ray therapy. It has been only recently that this manifestation has been brought to our attention, and it is not improbable that careful questioning would have shown a larger percentage of cases to have been benefited in this respect.

One other interesting point revealed by an analysis of the case histories was that twelve, or 22 per cent of the patients, suffered from eczema, either localized or general. This observation has been recorded before, but whether or not it has any significance is questionable.

COMMENT

The principal reason for reporting these cases is that we hoped that a collection of all the clinical manifestations which we could reasonably assume were characteristic of thymic disturbance, and that a critical analysis of them might suggest a solution to the vexed problem relating to the actual mechanism that produces the symptoms. In other words, could the symptoms enumerated above be produced by a toxic internal secretion, could they be explained by pressure of the gland on vital structures, or is it possible that both factors may be in operation?

We have given below under the two headings toxic theory and pressure theory the various factors that appear to us to have an important bearing on the question. The results of experimental work performed with the object of demonstrating an internal secretion have been omitted for the reason that experiments have not been performed suggesting that such a secretion exists which have not been repeated by other observers with contradictory results.

Facts in support of the toxic theory are:

1. The presence in serious cases of generalized signs, such as extensive lymphatic enlargement and a characteristic blood picture.

2. The fact that some cases without demonstrable enlargement of the gland are relieved of symptoms by roentgen-ray treatment. There was one such case in our series. The reverse is also true. A number of cases with enlarged thymus show no clinical symptoms.

3. The association of eczema with enlarged thymus.

4. The fact that in one case reported in the literature, in which one lobe of the gland was extirpated, the symptoms disappeared two days after operation, not immediately after as one would expect were direct pressure the etiologic factor. However, in this case one must rule out the possibility of pressure having been produced by the postoperative reaction of the traumatized tissues.

5. The fact that recurrent enlargement of the gland occurs not infrequently without corresponding recurrence of clinical signs.

Facts in support of the pressure theory are the following:

1. Operations have been performed by German surgeons for the fixation of the thymus to the sternum, and good results have been reported. This would suggest that the cause of the symptoms had been direct pressure.

2. The sequence of events in a typical holding-breath spasm suggests the pressure theory. It must be remembered that the crying spell is precipitated by some accidental injury. It would require some stretch of the imagination to believe that the crying per se liberated the toxic secretion; but it is quite credible, and indeed it has been seen during a fluoroscopic examination, that crying can enlarge or at least change the shape of the thymus or crowd it up into the upper mediastinum, so that it might exert pressure on nearby structures. It will be recalled that the right and left vagus nerves lie behind the thymus and in intimate relationship with it.

3. In two cases in this series, the attacks were precipitated by "huddling up" the child or by hyperextension of the head. In another, dyspnea and cyanosis were relieved by supporting the infant in the erect position. Both these facts are suggestive.

4. Thymic pressure of sufficient magnitude to produce compression of the trachea has been demonstrated repeatedly by bronchoscopic examination.

5. Several symptoms enumerated above, particularly cessation of respiration, rapid panting respiration and attacks of syncope, are very similar to the symptoms produced experimentally in animals and man by vagus stimulation.

6. The hoarse cough characteristic of aortic aneurysm is the result of pressure on the recurrent laryngeal nerve. The same type of cough, which occurs in thymic enlargement, may quite conceivably be due to the same cause.

ROENTGEN-RAY DIAGNOSIS AND TREATMENT

The roentgenographic evidence of thymic enlargement is usually well shown by exposures made in the anteroposterior direction, provided care is taken to have the patient lying in the exact supine position; but many radiologists now lay great stress on the importance of a lateral view in order to show evidence of pressure on the trachea. We have not, however, found this of great

value to date, and believe that most failures to recognize enlarged thymus by means of the roentgen ray are due to the fact that many of them are of the pedicled type and their shadow is intimately blended with that of the heart, leaving a comparatively narrow shadow in the mediastinal region above it. Many such cases, however, give a very characteristic shape to the heart shadow, which appears to be peculiarly prominent in its upper half. In the absence of demonstrable heart lesions we consider this to be suggestive, if not typical, of enlarged thymus.

The treatment of the condition by means of the roentgen rays has undergone little change, but presents several points of interest.

Having regard to the fact that the thymus lies close to the anterior wall of the chest, we now prefer to give all our treatment in the anteroposterior direction. Thus, the other structures lying in the region of the roots of the lungs receive a smaller dose than the thymus at every treatment, which is not the case when anything in the nature of crossfiring is done. It is not unreasonable to believe that prolonged irradiation of these structures can produce changes such as have been observed in adults when deep roentgen-ray therapy has been administered in maximum doses in cases of carcinoma of the breast. The most notable of these is fibrosis of the lung tissues. While we have yet to hear of any such result of deep roentgen-ray therapy in children, we think it wise to take every precaution against such a contingency. By giving the treatment entirely through the anterior chest wall, we make it necessary to guard against skin reactions by administering it somewhat less rapidly; but as the response to treatment is generally very prompt there is no great disadvantage in the method, which in especially severe cases can be modified. It is our custom to give a dose of from 20 to 25 milliampere minutes, varying with the age of the child, using approximately 90 kilovolts with a target-skin distance of 10 inches and a filter of 4 millimeters of aluminum. This is repeated in one week's time. Then an interval of two weeks is allowed to elapse, provided the symptoms do not persist in severe form, as is very rarely the case. Then two more treatments are given a week apart, making in all four treatments spread over a period of four weeks. When the patient reports for the third treatment, he is examined by the fluoroscope and a roentgenogram is made. It is usual at this stage to find a marked diminution in the size of the gland, although three treatments are generally required to reduce the thymus shadow to normal. The fourth treatment is given in all cases, in order to guard against a recurrence of the condition, as we have found that such an event is by no means uncommon.

No less than 20 per cent of the cases cited in this paper presented a recurrence either of the hyperplasia of the gland or of the symptoms, or of both. In some of these only three treatments were given; in others, four. Nearly all of these responded satisfactorily to a second course of treatment and thereafter remained normal.

When repeated recurrences have to be dealt with, we are faced with a somewhat difficult problem and are now inclined to be conservative in the matter of treatment, provided no serious symptoms are manifested by the patient. We have already drawn attention to two such cases in which the patients died of intercurrent infections of the respiratory tract with alarming rapidity, suggesting a greatly lowered resistance which may have been the result of the prolonged irradiation. On the other hand, we see no reason to believe that a single course of treatment as outlined above, or even two such courses, can be in any way harmful to an otherwise healthy child. Most acute respiratory infections, however, may be considered contraindications to the treatment.

The only untoward effects that we have found at all common are occasional vomiting, anorexia and restlessness during the twenty-four or forty-eight hours following a treatment. Sometimes somnolence is induced and may be sufficiently marked to alarm the mother, who should be warned of such transitory effects of the treatment. On the other hand, among the permanent effects we have frequently found a rapid general improvement in the patient's health which has been surprising.

While we do not wish to lay claim to having found a cure for all cases presenting the groups of symptoms described above, we are satisfied that a large number of them can be either cured or relieved of symptoms by this method of treatment, which is without danger provided it is not carried to excess.

When the diagnosis is in doubt and the symptoms are sufficiently suggestive, it is only fair that we should give the patient the benefit of the doubt by submitting him to one or more treatments as a therapeutic test.

CONCLUSIONS

1. The clinical manifestations described in fifty-four cases are due, we believe, to disturbance of the thymus gland.

2. Such symptoms as noisy nasal breathing, hoarse cough, attacks of syncope, restlessness and sleeplessness have not, to our knowledge, hitherto been described as being associated with thymic disturbance.

3. An analysis of these symptoms strongly suggests that the cause of their production is of a mechanical nature and is most probably due to vagus stimulation.

4. Roentgen-ray therapy proved efficacious in relieving the symptoms in 96 per cent of these cases.

5. This form of treatment, if not carried to excess, is unattended by danger.

6. Recurrence of thymic enlargement or of clinical manifestations has been noted in twelve, or 22 per cent, of the cases. In all these instances further roentgen-ray therapy resulted in complete recovery.

7. Patients showing suggestive symptoms should be given the benefit of roentgen-ray treatment, even in the absence of positive roentgenographic observations.

160 Bloor Street West.

Future of the Research Worker.—The medical research worker has gone through a long and expensive training both as a student and as a graduate; he has difficult and trying work, and has to contend with various drawbacks and difficulties. What are his rewards? Concerning those in some future state, we cannot say; but, if they are to balance those which he has missed here, they should be considerable. Here he may obtain great honor and renown and, what the true scientist values most, the admiration and respect of the small band of fellow workers who are able to understand his achievements. Beyond that, he is lucky if he is just able to live. It is pitiable to see, in case after case, the passing around of the hat to render life possible for the widows and children of distinguished scientists who have given their lives for their work. That this should be necessary is a disgrace to our vaunted civilization. It has to be done, not because such men are reckless or prodigal, but because they are forced to live at a certain level on totally inadequate incomes.—Bigger, J. W.: *Irish J. M. Sc.* **6**:26 (Jan.) 1927.

CLINICAL STUDIES OF GASTRIC FUNCTION*

ARTHUR L. BLOOMFIELD, M.D.
AND
CHESTER S. KEEFER, M.D.
BALTIMORE

Some time ago we described a method[1] for the simultaneous determination in man, following a standard stimulus, of the volume of gastric secretion, the p_H of the gastric juice and the motility of the stomach. In subsequent papers, studies on various phases of gastric function carried out by means of this method were reported. The present communication summarizes our various observations, and includes some further studies which have not previously been described.

METHOD

The method is briefly as follows: The subject should take no food during the twelve hours preceding the test. If possible, he should be under "basal" conditions; i. e., resting quietly in bed.

A duodenal tube is passed to a distance which will allow the tip to reach the most dependent part of the stomach. The fasting juice is withdrawn at five minute intervals for fifteen or twenty minutes. Then, without attracting the patient's attention, 50 cc. of 7 per cent alcohol to which 0.5 cc. of 1 per cent alcoholic phenolphthalein has been added is injected by means of a large glass (100 cc.) syringe through the tube into the stomach. The entire gastric contents are then immediately withdrawn, measured in the syringe and reinjected, save for 10 cc. which are kept for analysis. The patient is kept in a semirecumbent position, but during the aspiration is turned on both sides in order to make complete emptying of the stomach more certain. Ten minutes after the first aspiration, the stomach is again completely emptied, the contents are measured and returned except for the 10 cc. sample for analysis. This procedure is repeated at ten-minute intervals for one hour or until the stomach is empty (contents less than 10 cc.). It is very important that saliva is not swallowed during the test.

The samples are usually clear and limpid and are highly satisfactory for study. The following examinations are made:

1. *Titratable Acidity.*—This may be determined by the usual titration methods with tenth-normal sodium hydroxide and dimethyl or phenolphthalein as indicators.

2. *Hydrogen Ion Concentration.*—The micromethod of Brown[2] was found very satisfactory. A few drops of juice to which the indicator has been added are compared in little glass cells against standard buffer solutions similarly treated. The following indicators cover the usual range of gastric juice: thymol blue, p_H 1.2 to 2.8; bromphenol blue, p_H 3.0 to 4.6; methyl red, p_H 4.4 to 6.0; bromcresol purple, p_H 5.2 to 6.8; bromthymol blue, p_H 6.0 to 7.6; phenol red, p_H 6.8 to 8.4.

3. *The Volume of Gastric Juice Secreted in Any Ten-Minute Period.*—As pointed out above, phenolphthalein has been added to the alcohol test meal. The various specimens aspirated at ten-minute intervals may be made alkaline, thus bringing out the red color of the dye, the concentration of which can then be readily determined by reading against a standard in a colorimeter. In this way the percentage dilution of the gastric contents at various intervals is calculated. Knowing this, and knowing the total volume of stomach contents at the beginning and at the end of each ten-minute period, the maximum and minimum possible volumes of secretion which would satisfy these figures can be calculated by the following formula:[3]

$\left[\left(\frac{x}{y}\right) \times A\right] - A =$ maximum possible amount of juice secreted in ten-minute period, and

$B - \left[\left(\frac{y}{x}\right) \times B\right] =$ minimum possible amount, in which A equals the number of cubic centimeters of fluid in the stomach at the beginning of the period; B, the number of cubic centimeters at the end of the period; x, the concentration (percentage reading) of phenolphthalein at the beginning of the period, and y, the concentration at the end.

The actual amount of secretion evidently lies between the calculated maximum and minimum possibilities. These usually agree quite closely, so that an average can be taken which must be very near the true figure. In certain cases, however, especially when the stomach empties very quickly, the maximum and minimum values are so far apart that conclusions cannot be drawn as to actual volume of secretion. If the test is repeated on another occasion, satisfactory figures may be obtained.

By way of example, table 1 shows the calculated maximum and minimum values for the volume of secretion in four consecutive periods in one case.

TABLE 1.—*Volume of Secretion*

	Maximum, Cc.	Minimum, Cc.
Period 1	13	12
Period 2	14	14
Period 3	26	23
Period 4	13	12

It is evident that these figures are close enough to justify taking an average of the maximum and minimum volumes to represent the actual volume of secretion.

The volume of gastric contents discharged through the pylorus can be readily calculated for any ten-minute period when one knows the total contents at the beginning and at the end of the period, and the volume of secretion during the period. The motility of the stomach can be visualized by constructing a curve on the basis of the total gastric contents at ten-minute intervals.

Various writers[4] have previously employed the expedient of adding a dye to the test meal and determining the percentage dilution of stomach contents at various intervals. However, conclusions as to volume of gastric secretion or gastric motility cannot be drawn from this procedure alone, since dilution of the dye is modified not only by gastric secretion but also by another unknown factor, namely, the rate of gastric discharge. This point can best be emphasized by two examples of cases (table 2) in which readings of dye dilution at

* From the Medical Clinic of the Johns Hopkins University and Hospital.

1. Bloomfield, A. L., and Keefer, C. S.: A Method for the Continuous Quantitative Estimation of Gastric Secretion and Discharge in Man, Arch. Int. Med. **37**: 819 (June) 1926.

2. Brown, J. H.: Colorimetric Determination of Hydrogen Ion Concentration of Small Amounts of Fluid, J. Lab. & Clin. Med. **9**: 339 (Jan.) 1924.

3. In the former paper describing this method, the first part of the formula, owing to a misprint, read $\left[\left(\frac{y}{x}\right) \times A\right] - A$ instead of $\left[\left(\frac{x}{y}\right) \times A\right] - A$.

4. Gorham, F. D.: The Factor of Dilution in Gastric Analysis, J. A. M. A. **81**: 1738 (Nov.) 1923.

ten-minute intervals were practically identical, although the volumes of gastric secretion represented opposite extremes.

In case 1 there was 134 cc. of fluid in the stomach at the point when the phenolphthalein dilution was 20 per cent; in case 2 there were 9 cc. of fluid in the stomach when the phenolphthalein dilution was 18 per cent. In both instances, the initial stomach content was 50 cc.

TABLE 2.—*Rate of Gastric Secretion*

	Case 1		Case 2	
Ten-Minute Periods	Phenol-phthalein, per Cent	Volume Secretion, Cc.	Phenol-phthalein, per Cent	Volume Secretion, Cc.
First	82	43	69	10
Second	50	26	54	12
Third	36	40	37	13
Fourth	26	31	23	6
Fifth	20	67	18	5.5

Finally, still other examinations can be made, such as microscopic studies and ferment titrations. The titratable acidity of the pure juice may be calculated by allowing for dilution as indicated by the phenolphthalein readings of the various specimens.

This method makes it possible to assemble, simultaneously, a good many facts about gastric activity. As far as we know, there has not been a description of any other practical procedure for measuring volume of gastric secretion in man. The alcohol stimulus is purely arbitrary, although it has appeared satisfactory and adequate. Other test stimuli of various volumes could doubtless be used in a similar way.

In chart 1 and table 3 are shown graphically the data of an illustrative case.

TABLE 3.—*Observations in an Illustrative Case*

Specimen	Amount and Description	p_H	Dimethyl, Cc. N/10 NaOH	Phenol-phthalein, Cc. N/10 NaOH	Amount in Stomach, Cc.	Phenol-phthalein, %	Amount Secreted, Cc.	Amount Discharged, Cc.
1. Fasting	40 cc. of bile	....	..	..	...	..	....	....
2. Fasting (5 min. after number 1).	30 cc. of moderately bile tinged fluid	....	..	..	...	..	....	....
3. Fasting (10 min. after number 1)	16 cc. of slightly bile tinged fluid	1.2	78	82	...	..	....	....
4. Fasting (15 min. after number 1)	16 cc. of slightly bile tinged fluid	1.2	72	80	...	..	....	....
5. Immediately after meal	Clear, colorless fluid	1.9	16	20	56	72	....	....
6. 10 minutes after meal	Clear, colorless fluid	1.25	50	58	90	34	47.3	0
7. 20 minutes after meal	Clear, colorless fluid	1.15	70	74	118	20	52.0	12
8. 30 minutes after meal	Clear, colorless fluid	1.10	78	88	130	13	49.0	28
9. 40 minutes after meal	Clear, colorless fluid	1.10	84	94	133	10	33.5	22.5
10. 50 minutes after meal	Clear, colorless fluid	1.05	88	96	125	8	22.5	19.5
11. 60 minutes after meal	Clear, colorless fluid	1.05	94	102	115	4 (?)	....	....

CRITICISM OF THE METHOD

In the previous paper,[1] several difficulties that came up in connection with the determination of volume of gastric secretion were discussed. It was pointed out especially that the data on which the calculations were based were derived from estimations of the total volume of gastric contents at various intervals, and that if the stomach was incompletely aspirated, these data would be erroneous. In order to check this point, barium was introduced with the test meal on several occasions, and after the stomach had been aspirated, roentgenograms were made. The plates in each instance corroborated the fact that the stomach was empty. It appears that when the stomach is carefully aspirated with the subject in various positions all the contents, with the exception perhaps of a few cubic centimeters, may be withdrawn.

During the course of the present studies, a considerable number of observations have accumulated which indicate that the method, apart from any theoretical considerations, is reasonably accurate. Repeated examinations, for example, were made in a good many instances on the same subject. Errors in method under these circumstances should be revealed by inconstant results, but, as a matter of fact, repeated estimations of volume of gastric secretion were remarkably constant. The detailed figures have been reported previously,[5] but a few illustrative cases are given in table 4.

In the case of D., a man with pernicious anemia, repeated aspirations of the fasting stomach, both before and after administration of histamine, yielded only from 0.5 to 1 cc. of gastric juice to each ten-minute period. It was clear, therefore, that one was dealing with a stomach which secreted little or nothing. A test was then carried out by the present method, and the secretory volumes during three consecutive ten-minute periods were found to be 2.5, 2.5 and 1.0 cc. This result checks very well with the known secretory ability of this stomach.

RESULTS

A study was first made [5] of a series of thirty persons who did not present evidence of digestive disorder and who for the most part might be classified as normal. The purpose was to set normal standards with which observations in persons with gastric disease might later be compared. With regard to volume of gastric secretion, it was found that the maximum amount for a ten-minute period varied in different persons from 11 to 114 cc. In spite of these wide extremes, however, 73 per cent of the observations fell between 20 and 40 cc. When an average of all the ten-minute periods in each case was taken, the volume of secretion was found to vary from 9 to 64 cc., whereas 73 per cent of the observations were between the limits of 10 and 30 cc., and more than 90 per cent were between 10 and 40 cc. A great many subsequent tests have confirmed these figures and, in brief, it may be said that after the stimulus which we used, normal people secrete, as a rule, an average volume of from 10 to 40 cc. per ten-minute period. It must be borne in mind that there are occasional exceptions.

TABLE 4.—*Average Ten-Minute Volume of Secretion*

Examination 1 Cc.	Examination 2 Cc.
54	51
33	29
30	29
25	22
16	14
10	9

5. Bloomfield, A. L., and Keefer, C. S.: Clinical Physiology of the Stomach: Simultaneous Quantitative Observations on Gastric Secretory Volume, Acidity and Motility, Arch. Int. Med. **38**: 145 (Aug.) 1926.

Turning next to the question of acidity of the gastric juice, the results were as follows: When the maximum acidity reached at any time during the examination was estimated by titration against tenth-normal sodium hydroxide, dimethyl being used as indicator, the highest value obtained in any case was 118 in terms of the usual clinical nomenclature. In another patient the figure was 100, and from this point there was a steady gradation until finally six members of the series of thirty did not yield free acid on titration. Subsequently, observations in thirty other controls were obtained with similar results. It appears then that titratable acidities of from 0 to 100 may be found in persons without digestive disorder, and to all intents and purposes normal. It is certainly unwise to set down arbitrarily narrow limits of normality, and to regard a person whose stomach secretes a juice outside these limits as abnormal. Indeed, the terms subacidity and hyperacidity may be fairly criticized on the ground that there go with them clinical implications which are evidently unwarranted.

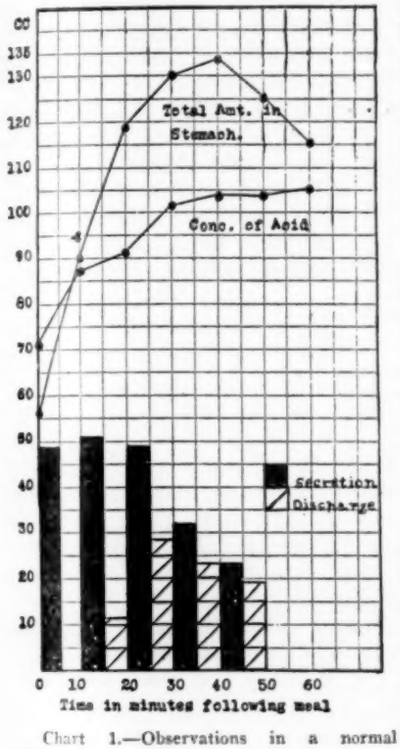

Chart 1.—Observations in a normal person.

If, now, the acidity of the gastric juice is expressed in terms of p_H, this point is brought out even more forcibly. It should be recalled that dimethyl changes at approximately p_H 3.0; hence, any juice the acidity of which is less than p_H 3.0 will give the yellow or anacid reaction when titrated against alkali with this indicator. As a matter of fact, the p_H readings of juice from the series of controls varied from approximately p_H 7.0 (neutrality) to p_H 1.05, which is nearly as acid as tenth-normal hydrochloric acid. One can hardly escape the conclusion that the acidity of the gastric juice is in no sense a constant such as the reaction of the blood, and while the majority of healthy adults secrete a juice which is within the range of activity of pepsin (from p_H 1.0 to p_H 2.0), infants are almost uniformly defective in this regard.[6] In a word, a juice of average reaction does not indicate that there is not a lesion in the stomach, nor does a juice which varies widely from the average value in itself point to clinical gastric disorder.

Motility was studied in two ways. First, the total volume of fluid in the stomach was measured at ten-minute intervals after the introduction of the 50 cc. meal, and, secondly, the time at which the stomach became empty was noted. The latter figure varied from fifteen to more than ninety minutes. The volume curves, several of which are shown in chart 2, are of interest. In certain instances, the stomach immediately begins to empty itself at a speed which varies in different examinations, but which on any one occasion is fairly uniform. In other cases, secretion outstrips discharge and the gastric content increases up to a certain point, after which the volume of contents steadily decreases. The smoothness of the curves should be especially noted. It is a point of physiologic interest and, incidentally, checks the accuracy of the method of study.

TABLE 5.—*Values Obtained for Volume Acidity and Emptying Time in Thirty Normal Persons*

Volume of Secretion in Ten-Minute Period	Percentage	Highest Acidity Reached, Range 0-118	Percentage	Emptying Time, Minutes
Less than 10 cc.....	3.3	Anacidity	20	15-90+ minutes
Between 10 cc. and 40 cc.	91.7	Under 40%	17	
More than 40 cc.....	5.0	Over 40%	63	

Such, then, were the normal values for volume of secretion, acidity and motility. They are summarized in table 5. The figures were next compared to see whether there was any correlation between the three. Charts illustrating this point may be found elsewhere;[5] in brief, a general relation could not be found between acidity and volume of secretion or motility.

A study was next made of the observations in the same person in successive examinations done under uniform conditions over a period of weeks. The results were striking. Acidity and volume of secretion were remarkably constant. Motility, on the other hand,

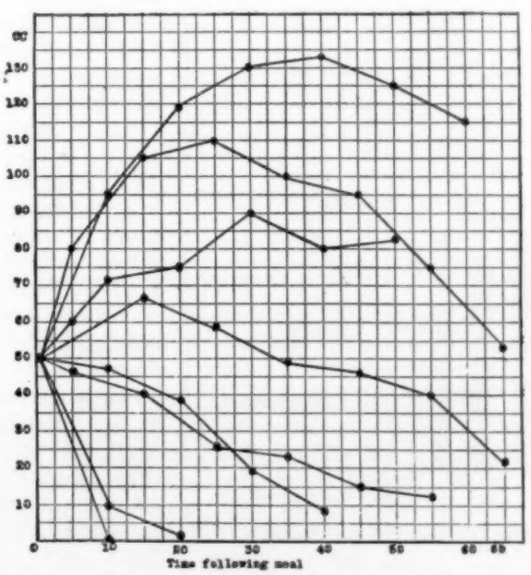

Chart 2.—Volume of stomach contents in various persons (ten-minute intervals after a standard meal of 50 cc. of 7 per cent alcohol solution).

was extremely variable and did not show constant features either as regards emptying time or gastric volume curve. The clinical notes showed, too, that there were great variations in gastric tonus on successive examinations (as evidenced by the difficulty with which the stomach was aspirated). It appears that a good deal of caution must be used in characterizing a stomach as "sluggish," "atonic," "active" or "irritable," unless such a tendency exists constantly on many repeated observations.

6. Davison, W. C.: Gastric Analyses in Normal Infants, Am. J. Dis. Child. **30**: 23 (July) 1925.

OBSERVATIONS IN PATIENTS WITH ABDOMINAL DISORDERS

With the data of the control series as a basis for comparison, a number of patients with digestive and other abdominal symptoms were examined.[7] The material included cases of gastric and duodenal ulcer, cancer of the stomach, cholelithiasis, cancer of abdominal organs other than the stomach, miscellaneous cases of abdominal disease, such as ulcerative colitis, volvulus and encapsulated peritonitis, and several instances of psychoneurotic states in which indigestion was an outstanding symptom. It may be said at the start that a careful analysis of the data yielded no information of diagnostic value, except in the ulcer and cancer of the stomach groups. In five verified cases of cholelithiasis, for example, the ten-minute secretory volumes all lay between 12 and 30 cc., and the titratable acidity of the gastric juice was between 20 and 94. In gastric and duodenal ulcer, on the other hand, distinct aberrations from the normal were found in the direction of large volumes of secretion and high acidity. Thus, among thirteen cases, approximately two thirds had ten-minute volumes of more than 40 cc., and about one-half secreted a juice the acidity of which was 100 or over. Characteristic observations as regards motility were not made, although the duodenal ulcers were on the whole associated with more rapid emptying than the gastric. Carcinoma of the stomach, on the other hand, was associated almost uniformly not only with absence of free hydrochloric acid as tested with dimethyl, but with a real anacidity (p_H of juice from 6.0 to 7.0) and with abnormally small volumes of secretion. These conditions obviously might not be present in very early cases, but they seem to be established by the time clinical symptoms have developed.

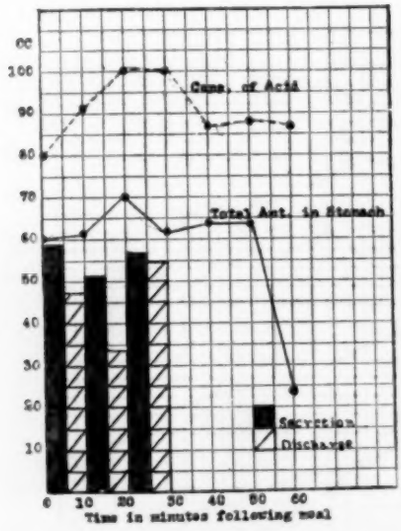

Chart 3.—Observations in a patient with gastric ulcer.

In summary, then, it may be said that ten-minute secretion volumes of more than 40 cc. immediately rouse a suspicion of ulcer of the stomach or duodenum. If the titratable acidity in the same case is high (90 or over) this suspicion becomes almost a certainty, although there are certain exceptions. Conversely, ten-minute volumes of more than 20 cc. practically rule out the presence of cancer of the stomach, especially if it can be shown that the stomach is able to secrete acid. Very small volumes of secretion (less than 10 cc. per ten-minute period), on the other hand, are practically diagnostic of serious organic disease of the stomach, especially if acid is not secreted. Studies of motility, aside from the finding of pyloric stenosis, have not yielded characteristic results in our hands, nor have we found any group of data diagnostic or even suggestive of gallstones, appendicitis, gastric neuroses or other disorders.

In charts 3 and 4 are shown, by way of illustration, the observations in a case of gastric ulcer and a case of cancer of the stomach.

ANACIDITY

A special study was made of the question of gastric anacidity.[8] As we have pointed out, p_H determinations seemed essential if one was to find out whether or not there was a total inability to secrete acid, as anacidity on titration against "dimethyl" merely means a p_H of more than 3.0. When the patients were separated into those who clinically had serious organic disease of the stomach, such as cancer or pernicious anemia, and those who clinically did not present evidence of organic lesions in the digestive tract, the results were found to be quite different.

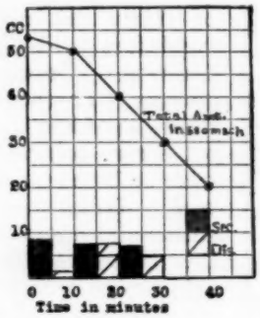

Chart 4.—Observations in a patient with carcinoma of the stomach.

In the first group, the ten-minute secretory volumes were almost always below 10 cc., and a complete failure to secrete acid persisted even after stimulation with subcutaneous injections of histamine. The p_H of the gastric juice was approximately 7.0. In the second group, on the other hand, the secretory volumes were usually within normal limits and the p_H fell after stimulation to below 6.0 and often to below 3.0 with appearance of free titratable hydrochloric acid.

It is evident that the ordinary test meal with titration against dimethyl is not an adequate method for determining whether or not the stomach is capable of secreting acid, and, undoubtedly, many instances of supposed anacidity are erroneously diagnosed.

A clinical analysis was also made of a large number of test meals done on a miscellaneous group of hospital patients to see whether various diseases could be correlated with gastric anacidity. It was found that if the increasing frequency of anacidity which occurs with advancing years was taken into consideration, a correlation between anacidity and disease could not be made out unless the patient had some grave anatomic lesion of the stomach, such as cancer or the gastritis of pernicious anemia. The general impression obtained was that deficient ability to secrete acid was a frequent occurrence in miscellaneous groups of persons and that, as a rule, it did not have clinical significance. The details of these studies are assembled elsewhere.[9]

SPECIAL STUDIES OF MOTILITY BY MEANS OF A BARIUM MEAL

It has been mentioned above that great variations in gastric motility both among groups of people and in the individual were found on successive occasions. In view of the stress that is usually placed on the roentgen-ray observations of gastric activity, it seemed of interest to use a meal similar to that employed by the roentgenologist, but to proceed along the lines that have been outlined for the present method.

The procedure was as follows: The patient was prepared in the usual way, the tube was passed and the fasting contents were aspirated. Then, instead of the

7. Keefer, C. S., and Bloomfield, A. L.: Observations on Gastric Function in Digestive Disorders, to be published.

8. Keefer, C. S., and Bloomfield, A. L.: The Significance of Gastric Anacidity, Bull. Johns Hopkins Hosp. **39**: 304 (Nov.) 1926.

alcohol meal, the following mixture was introduced: barium sulphate, 200 Gm.; sodium bicarbonate, 2 Gm.; mucilage of acacia, 15 cc.; phenolphthalein (1 per cent), 1 cc., and water to make 200 cc.

The test was then continued in a manner identical with that already described, except that the percentage of barium remaining in the stomach at each ten-minute interval was calculated (by centrifugalizing the samples in graduated tubes), in addition to determining the dye dilutions. This procedure was carried out in sixteen cases, and the following points were brought out:

1. The introduction of the barium mixture was followed by secretion of gastric juice in volumes comparable to those induced by the alcohol test meal.

2. Variation in motility was just as pronounced with the barium meal as with the alcohol meal. The emptying times in the series of sixteen observations varied from thirty to 120 minutes; the results on repeated examinations of the same person are given in table 6.

TABLE 6.—*Emptying Time with Barium Meal*

Case	Examination 1	Examination 2
244	60 minutes	60 minutes
248	40 minutes	120 minutes
250	30 minutes	70 minutes
252	60 minutes	30 minutes
268	40 minutes	40 minutes

Furthermore, the barium is discharged from the stomach in an irregular manner which is perhaps partly explained by the fact that as soon as acid appears in the gastric contents, and sometimes even sooner, the barium is precipitated in a gelatinous mass and does not longer uniformly pervade the stomach contents.

In Chart 5 are shown the curves of phenolphthalein dilution and barium discharge and of total gastric content found on two examinations of the same patient. The differences in behavior of this stomach on successive occasions are striking and emphasize the danger of concluding that special aberrations of motility are present unless they are constantly found on many examinations.

EFFECT OF ALKALI ON GASTRIC ACTIVITY

The present method seemed well suited for the study of effects of various substances on gastric secretion and motility. The effects of alkali (sodium bicarbonate) were investigated by adding the drug to the test-stimulus and carrying out the examination exactly as in the control. Protocols are shown in another paper.[9] It was found, in brief, that with moderate doses of soda (from 1 to 2 Gm.), the effect was purely one of neutralization of acid. The stomach contents remained alkaline either until the soda had been passed out of the stomach or until sufficient acid had been secreted to neutralize it. In the vast majority of cases, motility was the dominant factor.

There was absence of evidence that soda in the doses used either stimulated or retarded gastric secretion or exercised any especial effect on gastric motility.

EFFECT OF ATROPINE ON GASTRIC ACTIVITY

The test was done in a series of cases before and after the subcutaneous administration of a large dose of atropine[10] (1/30 grain, or 2 mg.). It was found that even when the fasting juice was abolished by the drug, the introduction of the alcohol meal stimulated gastric secretion, although the curve of secretion was altered as to form and the total volume was usually markedly diminished. The degree of acidity was more or less reduced, but there was not a parallel relation between degree of reduction of volume and degree of reduction of acidity.

Definite alterations in gastric motility were not detected when the change in the volume of secretion was taken into consideration.

The studies with atropine and with soda indicate that the present method is suitable for investigating such problems as the effects of various foodstuffs on the volume of gastric secretion.

9. Keefer, C. S., and Bloomfield, A. L.: A Quantitative Study of the Effect of Sodium Bicarbonate on Gastric Function, Bull. Johns Hopkins Hosp. **39**: 379 (Dec.) 1926.

10. Keefer, C. S., and Bloomfield, A. L.: A Quantitative Study of the Effect of Atropine on Gastric Function, Arch. Int. Med. **38**: 303 (Sept.) 1926.

SUMMARY

1. By use of the method described for the estimation of volume of gastric secretion, p_H of gastric juice, and motility of the stomach, the average volume of gastric secretion in normal persons varied from 10 to 40 cc. per ten-minute period.

2. The p_H of the gastric juice varied from 1.05 to 7.0.

3. The emptying time of the stomach varied from twenty to more than ninety minutes.

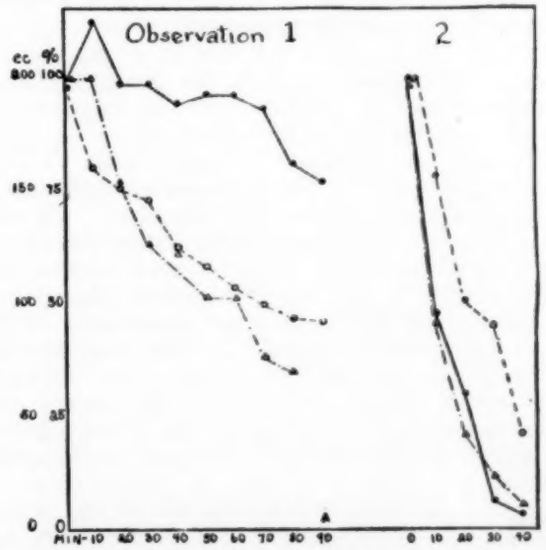

Chart 5.—Variations in gastric motility after barium: solid line, total volume in stomach; broken line, phenolphthalein percentage; line of dots, dashes and triangles, barium percentage.

4. The volume of secretion and the acidity of the juice were practically constant on repeated examinations of the same person; motility varied greatly.

5. A study of abnormal cases yielded characteristic results in only two types of disorder—gastric ulcer (high volumes, high acid values) and cancer of stomach (low volumes and failure to secrete acid).

6. A study of true cases of anacidity (from p_H 6.0 to p_H 7.0, failure to secrete acid after histamine) showed the condition to be relatively rare and usually associated with serious organic disorder of the stomach.

7. "Anacidity," as revealed by titration with dimethyl, is a common occurrence often without clinical significance.

8. Motility of the stomach was found to be very variable after a barium meal as well as after the alcohol test stimulus.

9. Sodium bicarbonate (from 1 to 2 Gm.) exercised a quantitative neutralizing effect on gastric acid, but did not stimulate or inhibit gastric secretion.

THE "DOCTOR'S HEART"

ALBERT S. HYMAN, M.D.
Director, Witkin Foundation for the Study and Prevention of Heart Disease, Beth David Hospital
NEW YORK

The extensive propaganda for periodic health examinations and the alarming increase in the number of sudden deaths from heart disease in persons apparently enjoying good health have brought unconsciously, perhaps, into the busy life of the average physician a feeling akin to apprehension when the problems of middle age are considered. Whether there is an actual increase in heart disease or whether the increase is only apparent has been the point of discussion in a recent editorial in THE JOURNAL;[1] without doubt, however, the physician is becoming more aware and increasingly cognizant of the number of cardiovascular deaths.

While the question may be of general interest, it becomes more sharply focused when the number of physicians meeting cardiovascular deaths is considered. One has only to scan the death columns in the current medical journals both in this country and abroad to realize the significance and truth of this observation, which in the last year or two has given rise to a popular phantasy, the so-called doctor's heart.

For those who support the idea of a clinical entity in the doctor's heart syndrome, the obituary columns of the large medical journals prove to be a veritable mine of confirmation. The analysis of such a typical list of deaths of physicians[2] is interesting. The list in question notes the deaths of seventy-two physicians; the cause of death is given in sixty cases. Of these sixty, thirty-three died from cardiovascular disease; six from surgical infections; five from renal disease; four from accidents; three each from cancer, diabetes and tuberculosis, and one each from pneumonia, senility and "cirrhosis of the liver." In this particular list, therefore, more than half of the physicians died from cardiovascular disease, and the number might even be increased by the addition of the "renal disease" cases which undoubtedly had associated cardiovascular complications.

Regardless of what may be thought of the doctor's heart syndrome, the astonishing figures brought to light by the foregoing analysis are of considerable interest and they present a problem worthy of investigation. More especially is this true when such high mortality rates are compared with rates from similar diseases in the general population. One of the popular educational posters of the Association for the Prevention and Relief of Heart Disease[3] announces that "one man in fifty dies of heart disease." Admitting that this figure is rather low, although undoubtedly taken from authentic sources, the mortality rate of more than 50 per cent among the listed causes of death among physicians as a class offers much ground for speculation.

A review of the literature prior to 1924 fails to reveal much of value in regard to the health of the physician, but with the advent of the periodic health examination the problem of the physician's health has become of more tangible interest, and a "physician heal thyself" fetish has been set up by the lay directors of many community health organizations, who have insisted that their medical advisers should also take advantage of the examination. There has thus crept into the recent literature many papers concerned with the health of the physician and the physician's family, for it was discovered, *horribile dictu*, that many of them suffered from the lack of medical attention.

Concerning what apparently is the physician's greatest health hazard—the onset of cardiovascular disease—there is nothing in the available literature either in this country or abroad which discusses the problem, and for this reason it was thought that the publication of a few observations obtained from the physical examination of physicians who have presented themselves for cardiovascular study might be of interest. One hundred cases have been selected at random from my personal files, and a statistical analysis has been made from the records. All of the physicians examined are in active urban practice; many are personal friends and colleagues; others have been referred by mutual acquaintances. In selecting 100 cases it was believed that a fairly accurate presentation might be made and certain generalizations arrived at.

The problem of the physician as a patient opens up a phase of medical practice which may be and often is very different from the customary physician and lay patient relationship. In the first place, the physician has invariably made his own diagnosis prior to seeking medical attention, and while an accurate description of symptoms is expected, the physician frequently and often unconsciously attempts to develop a symptom syndrome to coincide with the mental picture which he has of his own condition. Just as individual temperaments display wide variation, from the agitated and apprehensive type anticipating the worst to the sunny optimistic soul who always minimizes his own discomforts, so the physician as a patient tends to picture his symptom complex colored by unconscious motives. Only the keen judgment and experience of the examiner can determine in many cases how much and how little of the physician's story is really important.

TABLE 1.—*Complaints Which Brought the Physician for a Cardiovascular Examination*

Irregularity of the pulse	29
"Heart consciousness"	24
Precordial pain	10
Retrosternal discomfort	9
Dyspnea and "heart pain"	6
Dyspnea alone	3
Subjective complaints not found	19
Total	100

On the other hand, physicians as a whole are better trained in the observation of details about themselves than lay patients, and slight deviations from the normal are quickly detected and pondered over. In this connection it is interesting to analyze the various complaints which bring physicians to the cardiologist. Table 1 shows the six general groups of complaints that were given; the groups tend to overlap, but in general the division is quite accurately made. It will be noted immediately that the greatest number (twenty-nine) complained of irregularities of the pulse; in a "control" group of 100 patients taken from a cardiac clinic, the greatest number (sixty-one) complained of pain referred to the heart region and only two patients complained of an irregular pulse. This observation might be considered inherently characteristic of physicians as a group, for while the lay patient rarely knows anything about his pulse, the physician, once he has

1. Coronary Thrombosis, editorial, J. A. M. A. **87**: 759 (Sept. 4) 1926.
2. Deaths, J. A. M. A. **87**: 507 (Aug. 14) 1926.
3. Bulletin H. S. 84, Association for the Prevention and Relief of Heart Disease, 325 East Fifty-Seventh Street, New York.

detected an irregularity in his own pulse, may unconsciously feel for it many times during the day.

An analysis of the causes for the irregularities found in the pulse are given in table 2. Here it will be noted that extrasystoles were responsible in twenty-three cases, while four presented definite organic lesions. In two cases, in repeated examination, a graphic record could not be obtained of the irregularity; the physicians finally decided that they must have made incorrect observations and they did not have further complaints.

TABLE 2.—*Causes for Irregularity of the Pulse in Twenty-Nine Physicians*

Extrasystoles	23
Auricular fibrillation	2
Partial heart block	1
Paroxysmal auricular flutter	1
Irregularity not found	2
Total	29

The second large group of complaints, numbering twenty-four, I have assembled under the term "heart consciousness," a phrase first used by Wenckebach of Vienna and one concerning which too little, unfortunately, is known. Whether the emphatic statement attributed to the English physiologist Bainbridge, that consciousness of the involuntary neuromuscular system means unusual (abnormal) activity of an organ, or whether Refisch's opinion that such consciousness of the involuntary system is entirely physiologic, is correct the fact remains that consciousness of the heart's activity has, at least in my experience, usually been a symptom of some cardiovascular disease.

Patients use various expressions to describe this symptom; the words most often used are "beating of the heart," "violent movement of the heart," "palpitation," "flutter," "knocking," "jumping," "turning," "twisting," and "sudden stopping and starting." In the analysis of the causes of the heart consciousness in the twenty-four physicians complaining of this symptom (table 3), it will be seen that thirteen or more than half had extrasystoles of different types.

TABLE 3.—*Causes for Heart Consciousness in Twenty-Four Physicians*

Extrasystoles	13
Tachycardia	4
Bradycardia	3
Auricular fibrillation	1
Cause not found	3
Total	24

Precordial pain, retrosternal discomfort or pressure, and dyspnea associated with "heart pain," while sometimes overlapping, tend to form three readily distinguishable groups of complaints which may be considered together, as they all apparently have the most prognostic and diagnostic significance. I have attempted to analyze these three groups in tables 4, 5 and 6, indicating the predominating lesion at the time of the examination. This is done with some difficulty, as more than one lesion may and often does occur at the same time, one lesion being the sequel of another. Such for example, may be left ventricular hypertrophy as the result of an aortic insufficiency. In order to simplify the tables, only the "predominant single lesion" is given.

Of the twenty-five combined cases, twenty-one showed definite organic lesions, and of the four patients with negative physical examinations, three showed abnormal electrocardiographic tracings. Thus, twenty-four of the twenty-five patients had a definite pathologic background for their complaints.

TABLE 4.—*Causes of Precordial Pain in Ten Physicians*

Hypertrophy of both heart and aorta	3
Chronic endocarditis	3
Hypertrophy of heart alone	2
Dilatation of aorta alone	1
Cause not found	1
Total	10

TABLE 5.—*Causes of Retrosternal Discomfort and Pain in Nine Physicians*

Hypertrophy of both heart and aorta	4
Chronic endocarditis	1
Dilatation of aorta alone	1
Hypertrophy of heart alone	0
Cause not found	3
Total	9

TABLE 6.—*Causes of Dyspnea and "Heart Pain" in Six Physicians*

Hypertrophy of both heart and aorta	4
Chronic endocarditis	1
Dilatation of aorta alone	1
Hypertrophy of heart alone	0
Cause not found	0
Total	6

The sixth group consisting of those patients complaining of dyspnea alone might perhaps have been considered with the previous three groups, as an analysis of the causes of the dyspnea (table 7) shows definite cardiac disease. These patients, however, did not complain of cardiovascular trouble, and they had believed that other causes were responsible for the dyspnea.

TABLE 7.—*Causes of Dyspnea Alone in Three Physicians*

Hypertrophy of both heart and aorta	3
Chronic endocarditis	0
Hypertrophy of heart alone	0
Dilatation of aorta alone	0
Cause not found	0
Total	3

TABLE 8.—*Reasons That Brought Nineteen Physicians for Cardiovascular Examination When They Had No Subjective Complaints*

Rejected for life insurance	6
Examination preparatory to long journey	6
Examination preparatory to engaging in athletics and more active exercise	4
General examination suggested by periodic health examination propaganda	3
Total	19

Of the 100 physicians, nineteen came without subjective complaints of any kind; they had appeared for examinations for the reasons given in table 8. The results of the examination of this group is interesting. Of the six rejected for life insurance, four had high blood pressures, one had aortic insufficiency, and one had "anginal symptoms" with T-wave inversions in the electrocardiographic tracings. Of the remaining thirteen who appeared for examination for the reasons

stated in the table, four had hypertension, two had chronic valvular disease, and one had an aortitis.

Regrouping the entire 100 cases again, a study of the blood pressures was made, this time according to age groups (table 9). Examination of the average systolic and diastolic pressures in each age group is enlightening in offering a challenge to the oft-repeated statement that the strenuous life of modern urban medical practice tends toward an elevation in blood pressure. While it

TABLE 9.—*Blood Pressure Study of One Hundred Physicians Grouped Into Five-Year Age Periods*

Age Group	Number in Group	Systolic Pressure			Diastolic Pressure		
		Highest	Lowest	Average	Highest	Lowest	Average
25 to 30	3	138	110	128	88	56	68
30 to 35	10	160	108	134	92	56	70
35 to 40	21	212	96	148	108	60	74
40 to 45	36	240	90	158	120	58	80
45 to 50	12	240	100	162	110	62	82
50 to 55	6	220	98	158	122	56	84
55 to 60	5	260	106	170	118	58	90
60 to 65	4	200	102	158	102	66	84
65 to 70	2	166	98	132	80	64	72
70 to 75	1	...	..	156	..	..	88

is true that certain individual members of each age group may show a greatly increased arterial pressure, it is also equally true that low and frequently substandard systolic pressures are noted, so that the mathematical average of the entire group can perhaps be accepted as presenting a true cross section picture of this particular group of 100 physicians.

There does not seem to be great rise in diastolic pressures, either, so that in general it might be said that in spite of these figures having been taken from a selected group of physicians with known cardiovascular disease, the average systolic and diastolic blood pressure levels are not any higher than those taken from any other group of active men in the community.

The high incidence of extrasystoles (39 per cent) in this group of 100 physicians is of special note; twenty-three had detected their presence from an irregularity in the pulse, and it was the cause of "heart consciousness" in thirteen other physicians. Both MacKenzie and Vaquez speak of the rather common occurence of premature beats among physicians. An inquiry into the possible causes of these premature beats seems to show that excessive smoking, irregular and often insufficient sleeping periods, irregularly eaten meals, and general mental and physical fatigue, in the order enumerated, were the most frequent suggested sources leading to extrasystoles. Attempts to correct these abuses have shown gratifying results in twenty-one of the thirty-nine cases.

A word in regard to the prognosis of the precordial, retrosternal, and dyspneic pain groups may not be amiss. Of the 100 physicians who constituted this study, two have died within the year. One physician was 46 years of age, the other, 51. Both had suggestive electrocardiographic changes with the "T-wave inversions" described by Oppenheimer; both had shown a "coronary artery disease syndrome" some months prior to rather sudden deaths, while their general physical examination was almost negative.

The relative young age period for this type of cardiac disease prompted a study by one of my assistants into the age periods of the deaths of physicians as recorded in current medical journals. Six hundred and eighty-one deaths with listed causes were analyzed, and it was immediately noted that the 45 to 55 year period was undoubtedly the "dangerous age" for the physician. Of the 178 deaths listed in this age group, about 56 per cent had resulted from some cardiorenal vascular disease.

It is the constant notation of these facts that has undoubtedly given rise in the minds of many physicians to the idea that there has developed a new clinical entity, the "doctor's heart"; but a careful study of 100 physicians with cardiovascular disease shows that such a clinical entity does not exist, and that physicians, in spite of their strenuous lives, apparently present neither more nor less susceptibility to cardiac disease than any other group in the community.

SUMMARY

1. In a group of 100 physicians with cardiovascular disease, a high incidence of extrasystoles was noted.
2. A great increase in blood pressures was not found.
3. The types of heart disease discovered did not differ in any way from that found in other groups within the community.
4. While it is true that cardiovascular disease is the greatest cause of death among physicians, the belief that there is a clinical entity known as the "doctor's heart" is without foundation.

1175 Park Avenue.

THYROID ENLARGEMENT

OCCURRENCE IN SCHOOL CHILDREN IN RUTHERFORD COUNTY, TENNESSEE *

H. S. MUSTARD, M.D.
AND
J. I. WARING, M.D.
MURFREESBORO, TENN.

Reports of the frequency of occurrence of thyroid enlargement have been made in considerable numbers, but they have come largely from areas included in the so-called goiter belt. As far as can be ascertained, no figures from Tennessee have been published and not many figures have come from southern states.

Rutherford County, Tenn., is a fairly typical agricultural county situated in the geographic center of the state. McCarrison [1] has said that the ideal conditions for a goitrous region are a "country district, inhabited by agricultural people, living on porous soil, in the presence of abundant organic material." Even if the last requirement is discounted, Rutherford County meets the condition well; though outside the boundaries of the "goiter belt," it is not distant from the borders of that area where simple goiter is endemic. The hilly formation of the county is almost wholly of limestone. It has been observed [2] that "limestone areas of hilly tracts are the endemic haunt of goiter."

McClendon [3] found that water taken from the Cumberland River at Nashville, which lies in the county adjoining Rutherford, contains only 22 parts of iodine per hundred billion. Analyses by Mr. D. F. Farrar,[4] chemist to the Tennessee Geological Survey, of three samples of water taken from wells at separate points in Rutherford County show an iodine content of 12, 14 and 16 parts per hundred billion, respectively.

All in all, the conditions met here are eminently suited to the occurrence of simple goiter, and figures

* From the Rutherford County Child Health Demonstration of the Commonwealth Fund.

1. McCarrison, Robert, quoted by Clark and Pierce in Endemic Goiter, Pub. Health Rep., reprint 184, 1921.
2. McCarrison, Robert: Brit. M. J. **1**: 989 (June 7) 1924.
3. McClendon, J. F., and Hathaway, J. C.: Inverse Relation Between Iodine in Food and Drink and Goiter, Simple and Exophthalmic, J. A. M. A. **82**: 1668 (May. 24) 1924.
4. Farrar, D. F.: Personal communication to the authors

show that there is actually a considerable amount of goiter found in the process of routine school examinations. The thyroid was examined in every instance by

TABLE 1.—*Incidence of Thyroid Enlargement in 4,034 School Children in Rutherford County, Tenn.*

Age	Number Examined	With Thyroid Enlargement Number	With Thyroid Enlargement Per Cent
6	184	19	10.3
7	343	17	4.9
8	403	38	9.4
9	409	36	8.8
10	493	63	12.8
11	420	51	12.1
12	413	49	11.8
13	399	31	7.8
14	407	39	9.6
15	325	33	10.1
16	238	15	6.3
Total	4,034	391	9.7

inspection and palpation, and the diagnosis of thyroid enlargement was made only when there was undoubted evidence of an increase in the size of the gland; questionable cases and instances in which there was only a very slight enlargement of the isthmus were discarded and considered as "normal." The greater proportion of the enlargements were slight; i. e., definitely visible or palpable (or both) enlargement of mild degree. These made up 85.7 per cent of the total. In the remaining 14.3 per cent of moderate or marked enlargement are included two very definite cases of hyperthyroidism, one in a colored girl, aged 7½ years, the other in a white girl, aged 8 years (the latter had had a partial thyroidectomy at the age of 5 years).

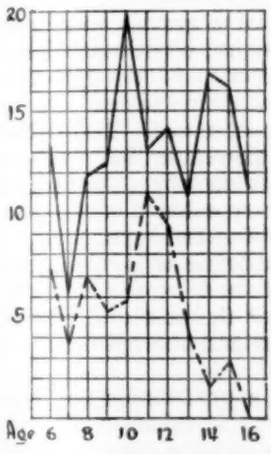

Chart 1.—Percentage of thyroid enlargement in school children of Rutherford County: solid line, girls; broken line, boys.

A separation into groups by age, color and sex brings out a better comparison. The figures show results much in accord with other observations regarding the peak of incidence, the tendency toward a lower incidence in boys, and the more marked tendency to a decreasing percentage of occurrence in the older age groups of boys than in the same groups of girls.

Cohen [5] noted that the peak of incidence of enlarged thyroid glands in New York school children came at the age of 14, and that in many cases there was an apparent self limitation or retrogression of the enlargement following the establishment of puberty. The figures indicate that in this group the peak comes somewhat earlier, possibly because of a tendency to earlier puberty in this warmer climate.

Olesen [6] found in Cincinnati and again in Colorado that there was no evidence of racial immunity to simple goiter in the colored race. Goldberger and Aldinger,[7] in reporting a thyroid survey made outside the goiter belt (New York City) remark that "enlarged thyroids are less frequently observed in negro girls, to the extent of 6.7 per cent." Cohen [5] also finds that in New York City the figure for negro girls is slightly lower than that for the white girls. Our results rather bear out the observations of Olesen, for our figures indicate that the incidence of thyroid enlargement is not only higher for colored girls than for white girls, but also higher for colored boys than for white boys. Table 3, while including only a small number, serves to show the difference. It represents figures obtained from two white schools and from one colored school, all situated within a few blocks of each other in the town of Murfreesboro, and all drawing their attendance from the same area; i. e., the town and the closely adjacent rural districts. Here we have indications of a racial susceptibility rather than a racial immunity.

TABLE 2.—*Thyroid Enlargement in 4,034 Children According to Age, Sex and Color* *

BOYS

Age	White A	White B	White C	Colored A	Colored B	Colored C	Total A	Total B	Total C
6	56	4	7.1	38	3	7.9	94	7	7.4
7	114	1	0.9	50	5	10.0	164	6	3.7
8	127	3	2.4	75	11	14.7	202	14	6.9
9	128	3	2.3	77	8	10.4	205	11	5.4
10	163	6	3.7	80	8	10.0	243	14	5.8
11	131	13	9.9	60	8	13.3	191	21	10.9
12	138	9	6.5	63	10	15.9	201	19	9.5
13	120	2	1.7	69	6	8.7	189	8	4.2
14	116	3	2.6	77	0	0.0	193	3	1.6
15	85	1	1.2	60	3	5.0	145	4	2.8
16	62	0	0.0	43	0	0.0	105	0	0.0
Total	1,240	45	3.6	692	62	8.9	1,932	107	5.5

GIRLS

Age	White A	White B	White C	Colored A	Colored B	Colored C	Total A	Total B	Total C
6	56	8	14.3	34	4	11.7	90	12	13.3
7	130	8	6.1	49	3	6.1	179	11	6.1
8	138	12	8.7	63	12	19.0	201	24	11.9
9	148	16	10.8	56	9	16.0	204	25	12.3
10	165	28	16.9	85	21	24.7	250	49	19.6
11	156	19	12.2	73	11	15.0	229	30	13.1
12	143	15	10.5	69	15	21.7	212	30	14.1
13	128	17	13.3	82	6	7.3	210	23	10.9
14	136	17	12.5	78	19	24.3	214	36	16.8
15	110	15	13.6	70	14	20.0	180	29	16.1
16	75	7	9.3	58	8	13.8	133	15	11.3
Total	1,385	162	11.7	717	122	17.0	2,302	284	12.3

* A, total number; B, number with thyroid enlargement; C, per cent with thyroid enlargement.

TABLE 3.—*Comparison of Thyroid Enlargement of White and Colored Children in Schools of Murfreesboro*

Age	Total Examined White	Total Examined Colored	Per Cent of Thyroid Enlargement White	Per Cent of Thyroid Enlargement Colored
6	28	28	10.7	17.9
7	61	22	9.8	22.7
8	57	44	7.0	27.2
9	58	34	8.6	23.5
10	79	50	8.9	26.0
11	77	41	18.2	31.7
12	64	37	9.4	37.8
13	60	27	3.3	29.6
14	65	47	6.2	25.5
15	35	32	8.6	34.4
16	11	24	0.0	16.7
Total	595	386	9.1	27.0

A comparison of the strictly rural schools with the schools in the town shows that in this instance thyroid enlargement is more prevalent in the town than in the country districts. The iodine content of the town water was 16 parts per hundred billion, as compared to from 12 to 14 parts for the two rural sources; but this slight variation is probably not particularly significant.

The theory of iodine deficiency as the cause of simple goiter is fairly generally accepted. If the lack of iodine

5. Cohen, F.: Goiter in Children in New York City: Thyroid Survey of 11,084 School Girls and 783 School Boys, Am. J. Dis. Child. **31**: 676 (May) 1926.

6. Olesen, Robert: Thyroid Survey of 47,493 Elementary School Children in Cincinnati, Pub. Health Rep. **39**: 1777-1802 (July 25) 1924; Endemic Goiter in Colorado, ibid. **40**: 1 (Jan. 2) 1925.

7. Goldberger, I. H., and Aldinger, A. K.: Goiter Incidence in School Girls of New York City, Am. J. Dis. Child. **29**: 780 (June) 1925.

is actually the result of an insufficient supply, there would not necessarily be any disturbance in the general metabolism, provided the thyroid compensated by hyperactivity. If, however, we assume that the iodine deficiency is the result of inadequate absorption, rather than deficient supply, or follows some metabolic derangement, some accompanying disturbance in the general nutrition might be presumed. Hence, a group of children with enlarged thyroids might be expected to show a higher incidence of malnutrition than would a group with apparently normal thyroids. This tendency was noted by Olesen and Taylor.[8] A comparison of two groups graded clinically on nutrition does show a margin in favor of the children without thyroid enlargement, but the contrast in these few is not sharp enough to be conclusive.

TABLE 4.—*Thyroid Enlargement in Urban and Rural Children*

	Urban		Rural	
	White	Colored	White	Colored
Total examined	595	386	2,030	1,023
Per cent of thyroid enlargement	9.1	27.0	7.5	7.7

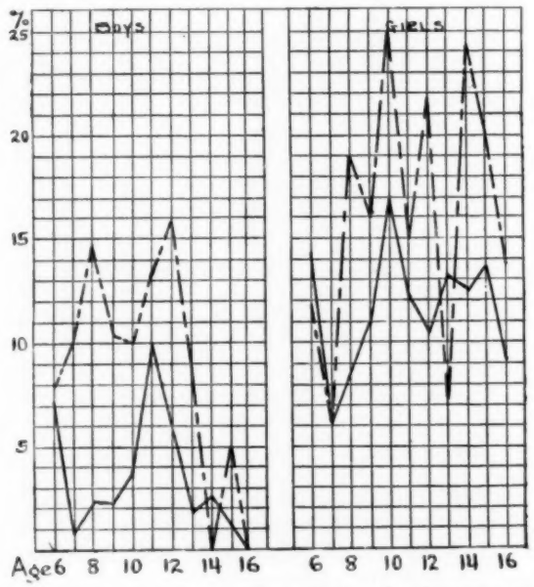

Chart 2.—Comparison of percentage of thyroid enlargement in white and colored school children of Rutherford County: solid line, white; broken line, colored.

TABLE 5.—*Comparison of Nutrition of 535 Children Without Thyroid Enlargement with Nutrition of 124 Children with Thyroid Enlargement (Murfreesboro Schools)*

	Group with No Enlargement	Group with Thyroid Enlargement
Percentage with good nutrition	66	57
Percentage with poor nutrition	34	43

SUMMARY

Thyroid enlargement is found in school children of Rutherford County, Tenn., to the extent of 9.7 per cent. It is more common in girls than in boys, and more frequent in colored than in white children.

The iodine content of water in this county is 12, 14 and 16 parts per hundred billion, respectively, in three separate sources.

8. Olesen, Robert, and Taylor, N. E.: Endemic Goiter and Physical Development in Cincinnati School Children, Pub. Health Rep. **41**: 1881 (Sept. 3) 1926.

THE USE OF SOAP IN THE PROPHYLAXIS OF VINCENT'S INFECTIONS

M. A. REASONER, M.D.
Lieutenant Colonel, Medical Corps, U. S. Army
NEW YORK
AND
WILLIAM D. GILL, M.D.
Captain, Medical Corps, U. S. Army
FORT SAM HOUSTON, TEXAS

Vincent's infection may present itself in the mouth and pharynx as Vincent's angina or the more common condition, which has come to be known as trench mouth, or the two may be present together. It is an acute infectious disease, presumably due to the combined action of a spirochete and a fusiform bacillus. It is characterized clinically by inflammation and the formation of ulcerative lesions of greater or less magnitude located primarily on the mucous membrane of the gums, cheeks, uvula, tongue or tonsil; a variable degree of necrosis of the mucous membrane and contiguous tissues; the formation of a grayish membrane at the site of the lesion or lesions; constitutional disturbances varying with the severity of the infection, and enlargement of the adjacent lymph nodes.

Two clinical types are to be observed. The milder and more common form is slower in its progress, remains on the surface and does not affect the mucous membrane deeply. The severe type has a rapid onset with more pronounced constitutional symptoms, a greater amount of mucous membrane is involved, and it penetrates the underlying tissues as a destructive process. According to Woods,[1] the fusiform bacillus predominates in the mild form and the spirochete in the severe form.

The infectious agent shows a predilection for lymphoid tissue and it frequently attacks this type of tissue in the oropharynx, from which fact the term "angina" is derived.

The spirochete of Vincent is a motile, somewhat irregular, spiral body or spirochete from 10 to 30 microns in length and about 0.5 micron in thickness. The fusiform bacillus is a nonmotile gram-positive, spindle shaped bacillus, from which shape the bacterium takes its name. It is thickest at the center and the extremities taper irregularly to a point. It exhibits distinct staining reactions with most of the ordinary stains. Portions of the protoplasm stain more deeply than others and give a barred appearance to the stained bacterium.

Ellerman [2] believes that the short form of the bacterium is a precursor or at least in some way closely related to the spirochete. Tunnicliff [3] has demonstrated that the spirochetes precede the fusiform bacilli in invasion of the tissues and on this basis has separated the local pathologic area into three zones: the innermost or deepest of these is rich in spirochetes; the intermediate zone contains spirochetes and fusiform bacilli, and in the outermost, which is the necrotic membrane, most organisms are found together with other bacteria. This observation gives weight to the contention that the spirochete is responsible for the production and spread of the disease. For all practical purposes, a dark field examination showing typical

1. Woods: J. Roy. Army Med. Corps **47**, No. 4, October, 1926.
2. Von Ellerman: Centralbl. f. Bakteriol., part 1, p. 729.
3. Tunnicliff, Ruth: J. Infect. Dis. **25**: 132-134 (Aug.) 1919.

spirochetes taken from a characteristic lesion is sufficient ground for and a preferable way of establishing a diagnosis. If typical spirochetes are found, the fusiform bacilli need not be looked for.

It is believed that the presence of this spirochete within the oral cavity constitutes a distinct menace to the infected individual and also to a lesser extent to those with whom he may come into intimate contact. It must, however, be conceded that the spirochete is often present in apparently normal mouths but, as will be shown, it is not so often found in and rarely injures those who are in the habit of following the ordinary methods of mouth hygiene.

Vincent's infection may assume serious proportions and cause much harm. Important vessels may become eroded, and hemorrhage may follow. The stomatitis may cause loss of a greater or less amount of tissue. As a result of this injury, the vitality of the teeth may become subsequently impaired. Osteomyelitis may occur as a complication. We have seen one such infection in which an extensive, bilateral osteomyelitis of the inferior maxilla followed a Vincent's gingivitis subsequent to the extraction of a tooth. It resulted in the destruction of the bone, with the exception of the epiphyses. Both the spirochete and the fusiform bacillus were recovered from the cortex and the medulla of the infected bone. Enlargement of cervical and mediastinal lymph nodes is a sequel which may assume serious proportions; and bronchial spirochetosis is a grave malady, sometimes terminating fatally. A fatal case of mastoiditis has been described by Ottoni [4] in which *Spirochaeta vincenti* was the causative agent. Emerson [5] reported 915 Vincent's infections in the American Expeditionary Forces in France, with one death. This number was, of course, only a small part of those which actually occurred.

It would seem obvious that any measure which will afford protection from and serve to prevent its occurrence is a valuable safeguard of which advantage should be taken. It is also certain that once the disease is established, energetic treatment is demanded.

These infections are common in both France and Germany but are not so frequent in the United States. After the troops had settled down in Germany, the venereal rate increased rapidly, and at the same time a number of genital infections were observed wherein these organisms were the causative agent. Meanwhile our dental officers in Brest and elsewhere with the American forces were occupied almost entirely in the treatment of Vincent's infections of the gums. Many soldiers with infections of the mouth and pharynx were present in the hospital or sick in quarters. During the entire time of the American occupation of Germany, this was a well recognized cause of invalidism. The sick report practically always showed cases of this character, and often there were as many as twelve or fifteen in the hospital at one time.

As is well known, most of the tooth pastes in common use contain a variable amount of soap, which is, perhaps, from our standpoint the most valuable of the components entering into their composition. The use of these tooth pastes and the practice of oral hygiene was not common among the lower classes of France and Germany. In Germany, at least during the time in question, it may have been partially a matter of economy, as the depreciated mark made it impossible for many to purchase anything except the absolute necessities of life. The lower classes of France are not and never have been accustomed to frequent bathing or the regular use of soap on the body. The Germans perhaps used it more freely; but under the changed economic conditions, many of the things became luxuries which we would consider necessities, and soap was one of these items. When an American soldier wanted to "make a hit" with his German sweetheart or her family, there were three presents that he could give which were always gratefully received: coffee, sugar and soap. It was learned officially that in various public institutions in the American area, such as hospitals and orphan asylums, the shortage of soap was keenly felt. Inquiry among German physicians developed the information that Vincent's infections had been uncommon among the better classes before the war and that such infections were considerably more numerous thereafter. Along this line is the observation by Corbus [6] that he had seen a number of Vincent's venereal infections in his clinics but rarely among the better classes in his private practice. It was especially noted in the American forces in Coblenz that these infections were rare among the officers and their families and the better class of noncommissioned officers and soldiers. They were most commonly seen among the soldiers who appeared lax in their personal hygiene or who might have been expected to associate most freely among the poorer classes of Germans.

Several years ago one of us [7] described the effect of solutions of toilet soap on the spirochete of syphilis, but the attempt was not made at that time to discover the spirocheticidal element in the soap. Nichols [8] and Walker [9] have conducted much experimental investigation on the bactericidal properties of the various fatty salts found in soaps, and the results they have obtained have been both interesting and valuable.

Walker did a considerable part of his work with chemically pure soaps made in the laboratory from the chemically pure acids. Some of his conclusions are as follows: The potassium soaps are better suited for experimental work than the sodium soaps on account of their greater solubility, and their activity increases with their solubility. The effect is more pronounced in warm or hot solutions than at room temperature. Pure soap made from lauric, myristic and palmitic acids are about equal in their effect on the pneumococcus, streptococcus, meningococcus, gonococcus, and the bacilli of diphtheria and typhoid, but they have little effect on the staphylococcus. A 0.7 per cent solution was sufficient to kill the first three in fifteen minutes. The oleates, laurates, linolates and linolenates have a lesser degree of selective activity on the pneumococcus, streptococcus, meningococcus and gonococcus and do not affect the bacillus of typhoid. Coconut oil soaps have a pronounced action on the typhoid bacillus as well as on the paratyphoid A and B bacilli and *Bacillus dysenteriae* of both Shiga and Flexner, and may be said to have the highest germicidal action of any. He is of the opinion that about 8 per cent of soap will be found in the average lather. He also conducted a series of experiments showing conclusively the germicidal effect of soap solutions on the bacteria found in saliva. The bacillus of diphtheria is affected about as are the pneumococcus and streptococcus. Lauric acid

4. Ottoni: Biol. Soc. Med. São Paulo; abstr. J. A. M. A. **74**: 1474 (May 22) 1920.
5. Emerson, H.: Mil. Surgeon **49**: 642 (Dec.) 1921.
6. Corbus, B. C.: Erosive and Gangrenous Balanitis, J. A. M. A. **60**: 1769-1774 (June 7) 1913.
7. Reasoner, M. A.: Soap as a Prophylactic, J. A. M. A. **68**: 73 (March 31) 1917.
8. Nichols, H. J.: J. Lab. & Clin. Med. **5**: 502 (May) 1920.
9. Walker, J. E.: J. Infect. Dis. **35**: 557 (Dec.) 1924; **37**: 181-192 (Aug.) 1925.

soap was shown to have the most general action as a germicide, and it is this acid which is found in greatest proportion in coconut oil. A solution of 1:50,000 was sufficient to kill the pneumococcus in fifteen minutes, and a 1:3,000 killed the streptococcus and 1 per cent solution the typhoid bacillus in the same length of time.

It seems probable that the bactericidal as well as spirocheticidal action is in some way concerned with the well known effect of soaps in lowering the surface tension of water. However, this does not explain such selective actions as were shown to exist as well as the resistance of the staphylococcus. It is suggested by Walker that this may be explained by the variations in interfacial tension between the liquid and the bacterium, and that this tension varies with the liquid-air interspace.

In some investigations carried out by one of us (M. A. R.) on the spirocheticidal action of these various soaps, the results obtained were practically in accord with those reported by Nichols and Walker. The stearates showed little activity, while the oleates were more effective. Ittner [10] explains the slight action of the stearates by the fact that they are considerably less soluble. McBain [11] has disproved the opinion formerly held by some that the germicidal action of soaps is due to the presence of free alkali. Walker's work, as well as part of that done by us, was performed with neutral soaps prepared in the laboratory from chemically pure fatty acids.

Since soaps vary so much in their composition, it is believed that a brief review is pertinent to the subject. In the preparation of soaps, the fats are treated with sodium or potassium hydroxide or both. The result is glycerin and the sodium or potassium salts of the fatty acids, which latter constitute soap. The fats most commonly used are tallow and the oils of the palm, olive and coconut. Other fats are frequently added in small quantity. Green soap is made from linseed oil. Soaps made from tallow will approximate the following composition: stearates, 23.2 per cent; palmitates, 28.4 per cent, and oleates, 48.4 per cent.

When a good lather is required, as in shaving cream and soaps, or a medium or high grade toilet soap is desired, a variable amount of coconut oil is added to the stock. Too much coconut oil produces a soap that is irritating to the skin. Probably the best soap for general toilet purposes as well as one having satisfactory germicidal properties would be made from a stock of from three to four parts of tallow to one of coconut oil. It would be almost entirely a sodium soap and its composition would be about as follows: stearates, 22 per cent; palmitates, 24 per cent; oleates, 37 per cent; caprates, 4 per cent; laurates, 8 per cent, and myristates, 5 per cent.

The antiseptic effect of soap is obtained most efficiently when it is applied as a lather and then allowed to dry. Rinsing immediately after washing reduces the germicidal action about one fifth. If applied without rubbing and lathering, the germicidal effects are much reduced.

The effects of pure soaps and a number of the common toilet soaps (the latter of which are practically neutral in their reaction) on Vincent's spirochete was first studied by the introduction of 1:1,000 solutions of these compounds into slides rich with spirochetes while undergoing dark field examination. The effect was either to dissolve them or to render them nonmotile. It was found that the pure soaps which were most highly germicidal had a like action on Vincent's spirochete as well as on other mouth spirochetes and *Spirochaeta pallida*. A series of toilet soaps was examined without a great difference among them being observed. So far as Vincent's spirochete was concerned, they were about equal to the more efficient of the pure soaps; but it must be understood that the methods employed did not permit of sufficient accuracy to make an absolute statement of slight or moderate variations which may exist in the spirocheticidal action of the different ones studied, and which could be determined by a count of bacterial colonies. In this connection, a patient who had suffered from repeated attacks of Vincent's angina, and who had a chronic gum and tonsillar infection, told us that he had discovered some months before that he could improve the condition of his mouth and obtain temporary relief by the use of shaving cream as a dentifrice.

In a small series of cases available for this purpose, dark field examinations were made and large numbers of Vincent's spirochetes were found. Immediately following the examination, the infected areas were thoroughly swabbed with a 6 per cent gel of a soap made from a stock containing tallow and coconut oil. Once every half hour for several hours the patients were directed to gargle a 1 per cent solution of the same soap. An examination made at the end of this period showed a manifest reduction in the number of spirochetes, especially in superficial lesions.

In view of the foregoing evidence it was thought desirable to determine what curative effect soap solutions might have on a series of pathologic lesions of this nature. The treatment was supervised by one of us (W. D. G.) in the nose and throat clinic of the station hospital of the American forces in Germany, located at Coblenz. A series of twenty-five clinical infections were taken consecutively and treated only with soap applications; other treatment was not given. There was none of the severe type among this number. The soap used was the same mentioned in the preceding paragraph. The lesions were thoroughly swabbed three times daily with a 6 per cent gel and the patients were directed to gargle every half hour with a 1 per cent solution, except just before the dark field examination in the laboratory. A complete clinical cure was effected in each case, and the throat and mouth became at least temporarily free from the characteristic organisms. The average time required to achieve this result was 7.12 days, which was somewhat longer than the average time required with the other remedial agents employed to attain the same end.. All the infections treated were tonsillar in type, and in approximately 40 per cent there was an associated gingival involvement. A few of the patients objected to the taste of the soap. This, without doubt, could have been improved by the addition of some essential oil; but that would have introduced a complicating factor. Had any patient failed to react properly to this treatment, it would have been immediately suspended and standard methods employed.

While treatment along the lines indicated might give satisfactory results in superficial lesions in mild cases, it would be wiser to depend on standard methods, such as permanganate or chromic acid. It is not our purpose to attempt to popularize the method of treatment or to recommend it as such, but rather to make known what we consider the efficient prophylactic

10. Ittner: Personal communication to the authors.
11. McBain: Third Report on Colloid Chemistry, Brit. A. for Adv. of Science, 1920.

action of soap solutions and compounds against Vincent's infections.

CONCLUSIONS

1. Vincent's spirochete is an important factor in the production of the pathologic lesions of Vincent's infections.

2. Determination of the spirochete by means of dark field examination affords a rapid and accurate method of diagnosis when checked against the clinical picture.

3. Vincent's spirochete may be an inhabitant of the apparently normal buccal cavity. Its presence under these conditions is a potential source of danger to the person harboring it and to others closely associated with the carrier.

4. Solutions of ordinary toilet soaps, as well as pure soaps prepared in the laboratory, have a selective action on this class of organisms and a definite spirocheticidal effect, and their use in dentifrices assists in keeping the oral cavity free from mouth spirochetes, thereby affording a measure of protection against tissue infection.

5. The laurates, palmitates, myristates and oleates are all efficient for this purpose, probably in the order mentioned.

6. The presence of the organisms of this disease and of the disease itself vary inversely with the care given to personal hygiene and the regular use of soap by the persons concerned.

7. Any measures that retard or prevent chronic irritations of the mouth will doubtless have some effect in lowering the incidence of cancer of the mouth.

8. The proper use of soap and soap compounds is rather that of a prophylactic than a method of cure, and their use for the latter purpose is not recommended.

PARALLELISM BETWEEN HERXHEIMER AND KAHN REACTIONS*

JAMES E. HOUGHTON, M.D.
Lieutenant Commander, M. C., U. S. Navy
WASHINGTON, D. C.

The Herxheimer reaction may be defined as an aggravation of pathologic processes in syphilis following the use of antisyphilitic therapy. The reaction manifests itself in various ways. There may be an increase in the intensity of the lesions of the skin and mucous membranes. Gummas may become swollen and ulcerate before improvement is shown. Visceral lesions may react in a similar manner, manifesting themselves by fever, severe nephritis and obstructive jaundice lasting for a week or more. In syphilis of the nervous system, the symptoms may range from a mild cephalalgia to intensely aggravated focal symptoms and paralysis.

As to the nature of the Herxheimer reaction, much difference of opinion exists among different workers. Many believe it is produced by the liberation of endotoxins from *Spirochaeta pallida,* thereby accentuating the local and general syphilitic manifestations. Ehrlich suggested that the reaction is due to insufficient dosage of arsphenamine, and that instead of destroying the spirochetes the drug stimulates the organism to greater multiplication and activity. Some consider the Herxheimer as a "focal reaction" similar to that induced by the subcutaneous injection of tuberculin. Others consider the reaction as being due to disturbances in the vascular system of the patient. Still others look on it as an anaphylactic phenomenon.

* From the laboratories of the U. S. Naval Medical School.

With the adoption of the Kahn test as a standard for the serum diagnosis of syphilis in the U. S. Navy in place of the Wassermann test,[1] an opportunity was offered to determine whether the aggravation of clinical symptoms in the Herxheimer reaction ran parallel with an increase in serologic intensity of the Kahn reaction. The routine Kahn reaction—as is true of the Wassermann reaction—furnishes no information as to serologic intensity beyond 4 plus. The quantitative Kahn reaction,[2] however, gives the number of syphilitic reacting substances (Kahn units) in the blood of a patient, and furnishes an excellent means for studying not only the effect of therapy but also the extent to which it is related to the Herxheimer reaction.

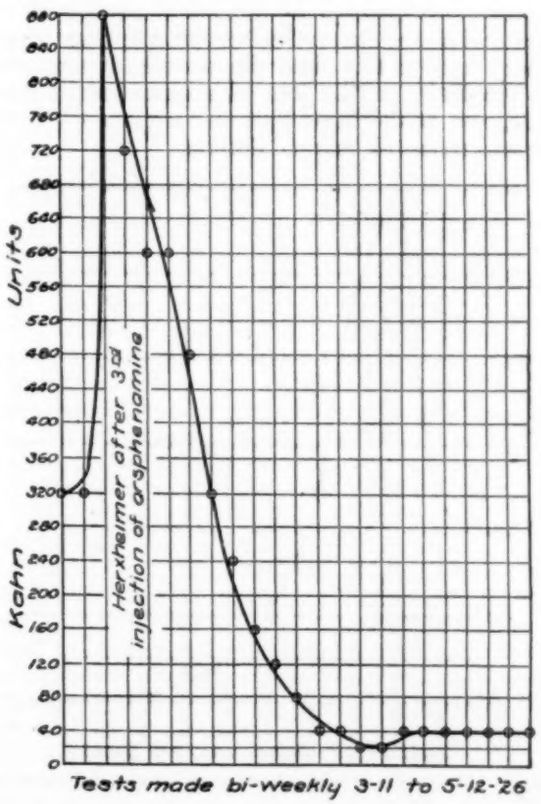

Chart 1.—Parallelism between Herxheimer and Kahn reactions in early secondary syphilis.

The quantitative Kahn reaction is employed as a routine procedure in these laboratories on all serums giving positive reactions with the routine or regular Kahn test. This quantitative reaction has shown in some cases of early syphilis transient increases in the number of reacting substances in the blood, associated with an accentuation of the clinical symptoms suggesting Herxheimer reactions. Further studies brought to light two cases giving marked Herxheimer reactions which showed a rise in the intensity of the Kahn reactions. These cases are illustrated in the accompanying charts.

Chart 1 (W. R. B.) represents a case of secondary syphilis with advanced secondary cutaneous lesions and mucous patches, and with a penile lesion of two months' duration. On consecutive days, the quantitative reaction

1. Houghton, J. E.: Expediting the Serum Diagnosis of Syphilis by the Employment of the Kahn Precipitation Test, U. S. Nav. M. Bull. **23**: 347 (Nov.) 1925; Kahn Precipitation Test Established as Standard, circular letter 420, Department of the Navy, Bureau of Medicine and Surgery, Dec. 31, 1925.

2. Kahn, R. L.: Serum Diagnosis of Syphilis by Precipitation, Governing Principles, Procedure and Clinical Application of the Kahn Precipitation Test, Baltimore, Williams & Wilkins Company, 1925, p. 148.

gave 320 Kahn units (the routine Kahn reaction was four plus). The patient received three injections of arsphenamine, 0.4, 0.4 and 0.6 Gm., respectively. Following the third injection there was a marked aggravation of the cutaneous and mucous membrane lesions. The Kahn reaction at this time gave 880 units. No further arsenical treatment was administered. Intramuscular injections of mercury and bismuth were given twice weekly. A gradual decline of clinical symptoms with steady and constant decline of the number of Kahn units was noted.

Chart 2 (C. E. C.) also represents a case of secondary syphilis with a macular eruption and intra-urethral chancre. This patient showed a four plus Kahn reaction in the routine test and 80 Kahn units in the quantitative procedure. Following an injection of 0.4 Gm. of arsphenamine, a generalized maculopapular eruption appeared and at this time the quantitative procedure gave 240 Kahn units. The cutaneous lesions cleared rapidly, and at the same time the number of units in the serum showed a marked decline.

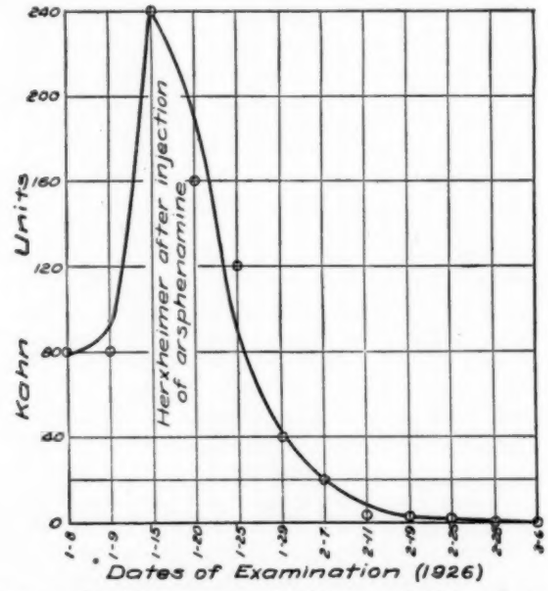

Chart 2.—Parallelism between Herxheimer and Kahn reactions in early secondary syphilis.

It is apparent from these two charts that the intensity of the clinical symptoms (Herxheimer reaction) in syphilis following treatment goes hand in hand with the intensity of the serum reaction as demonstrated by an increase in Kahn units. Furthermore, it is questionable whether the aggravation of clinical symptoms in these cases was due to insufficient therapy, since in the first case (chart 1) the Herxheimer reaction, and the sharp increase in Kahn units were noted after the third injection of arsphenamine. The hypothesis that the Herxheimer reaction is the result of the liberation of a large amount of endotoxin from *Spirochaeta pallida* as the immediate effect of treatment appears to fit in better with these observations. If this is true, one would have to assume that this liberation of endotoxin is also responsible for the increase in the intensity of the Kahn reaction. Whatever the explanation, the two cases recorded indicate that there is a sharp parallelism between the Herxheimer and Kahn reactions.

In connection with the Wassermann test, it is generally known that a negative reaction may be converted to a positive one following antisyphilitic treatment. This phenomenon is known as a provocative Wassermann recation. There is no adequate explanation for this reaction. Many believe it to be the result of syphilitic reagin liberated in the blood due to the disintegration of spirochetes caused by treatment. However, there is unquestionably a close relationship between the provocative serologic reaction—whether it is Wassermann or Kahn—and the Herxheimer. It might be of interest to add that the Kahn reaction does not require provocative therapy to the same degree as the Wassermann, because the Kahn, being more sensitive than the Wassermann, is positive in most cases of treated syphilis long after the Wassermann reaction is negative.

SUMMARY

The observations in the two cases presented tend to show that the increase in intensity of clinical symptoms in syphilis following antisyphilitic therapy (Herxheimer reaction) runs parallel with the increase in intensity of the serum reaction as demonstrated by the quantitative Kahn reaction.

Foot of Twenty-Fourth Street N.W.

INACTIVATION OF EPINEPHRINE BY CERTAIN COLLOIDAL SILVER PREPARATIONS *

J. D. PILCHER, M.D.
CLEVELAND

To lessen secretion, usually in acute nasal infections, epinephrine is often used locally, either alone or in combination with various supposedly antiseptic solutions, notably with silver protein preparations. As the majority of the silver preparations in solution liberate silver ions,[1] it would seem that they might inactivate the epinephrine, as epinephrine and other alkaloidal compounds are destroyed by many metallic salts. The investigation reported here was undertaken, therefore, to determine the duration of the action of epinephrine in such silver compounds.

METHOD

Epinephrine decreases nasal secretion, probably by lessening the circulation through local vasoconstriction. As vasoconstriction is readily determined by local blanching of the skin when epinephrine is introduced into the skin by scratching, this method was chosen to determine the epinephrine activity. For nasal application, epinephrine is commonly used in a strength of 1 part of the 1:1,000 solution to 3 or 4 parts of the silver preparation, making roughly a 1:4,000 solution of epinephrine. For the purpose of this investigation, it was used in a dilution of 1:4,000 and 1:1,000, the latter strength for comparison, although it seems not to be used in practice. The epinephrine was mixed with solutions of the silver preparations and the mixture was tested at suitable intervals until blanching of the skin failed to appear.

It had been found in previous work [1] that organic silver preparations were less antiseptic (on yeast cells) in physiologic sodium chloride solution than in aqueous solutions, the interpretation being that the active silver was precipitated by the chloride; by analogy it would seem that saline solution should "protect" the epinephrine from the action of the silver ions, or in other words that epinephrine, theoretically at least, would remain

* From the Department of Pediatrics, Western Reserve University School of Medicine, and from the Babies and Children's Hospital.

1. Pilcher, J. D., and Sollmann, Torald: J. Lab. & Clin. Med. 8: 301-310 (Feb.) 1923.

active longer in saline than in aqueous organic silver solutions. Therefore, as the commonly used preparations of epinephrine, the 1:1,000 dilution and the tablets, contain sodium chloride, the experiments were made first with these and the results checked with chloride free solutions. The chloride free solutions were made by dissolving the epinephrine alkaloid (Parke, Davis & Co.) in dilute nitric (1:1,000) or boric acid (1:250), neither of which solutions precipitates with silver nitrate. The epinephrine in these solutions retained its activity much longer than in any of the organic silver solutions; a mixture of epinephrine, 1:1,000, in nitric acid, 1:1,000, retained its original strength more than four months, and two mixtures of the same epinephrine concentration in boric acid 1:250, one sample in saline solution, retained much of their activity after ninety days. All mixtures were kept at room temperature and ordinary room daylight.

The silver preparations examined were protargol representing the strong silver protein type, argyrol and solargentum of the mild type, neo-silvol (a colloidal silver iodide) and silver nitrate. These were used in the usual strengths common in therapeusis. At least two samples of each compound were examined.

The Duration of Action of Epinephrine in Solutions of Organic Silver Preparations and of Silver Nitrate

Silver Preparation	Percentage Solution	Concentration of Epinephrine: Without Chloride 1:1,000	Without Chloride 1:4,000	With Chloride 1:1,000	With Chloride 1:4,000
Nitric acid (as control).....	0.1	7+ mo.			
Boric acid (as control).....	0.25	3+ mo.	.....	3+ mo.	
Protargol.....	10	1-2 min.	1-2 min.	6-8* hrs.	3-5 hrs.
	10	5-60 min.	.....	24 hrs.	6-12 hrs.
	2	6-8 hrs.	3 hrs.	7+ days	2-3 days
	2	.....	.....	16 days	30 hrs.
Solargentum...	10	8-14 hrs.	4-6 hrs.	6 hrs.	3-5 hrs.
	10	.....	.....	7-12 hrs.	3-4 hrs.
	10	.....	.....	.....	30-70 min.
Argyrol.....	10	8-14 hrs.	1-2 hrs.	.....	3 hrs.
	10	.....	.....	5-20 hrs.	3-5 hrs.
	10	8-13 hrs.	3 hrs.	8-13 hrs.	6-9 hrs.
Neo-silvol.....	25	7+ days	7 days	25+ days	12+ days
	25	18 days	.....	20-25 days	7 days
Silver nitrate..	10	5 days / 10 days	8-15 hrs.		
	5	7 days			
	1	33 days	7 days		
	0.1	33+ days	33+ days		

* When two figures are given, the epinephrine became inactive some time between them, for instance between six and twelve hours, no experiments being made in the interim.

RESULTS

The results are summarized in the table. It will be seen that, as ordinarily used, protargol, solargentum and argyrol destroy the activity of epinephrine in the commonly used strength (1:4,000) in from three to twelve hours, and the 1:1,000 solution in a somewhat longer time, but within twenty hours. Neo-silvol, however, in 25 per cent solution, has very slight destructive action on similar concentrations of epinephrine; the action of the 1:4,000 solution persisted in one sample seven days, in another for twelve days, and the 1:1,000 solution remained active for about twenty-five days. These periods correspond to the complete inactivation of the epinephrine, but for therapeutic purposes the manifest vasoconstrictor action would be lost in a considerably shorter time.

A striking result was that with argyrol, solargentum and neo-silvol, the rate of destruction of epinephrine in the chloride containing and in the chloride free solutions was similar. The destructive action of protargol, however, was much delayed by the presence of chloride, for the 10 per cent chloride free solution inactivated the epinephrine at once in two samples, and in less than an hour in a second sample in well controlled experiments, and in a 2 per cent solution also much more rapidly than in the presence of chloride. These results would seem to indicate that, in the case of protargol, the librated silver ions inactivated the epinephrine, and that this action was lessened by the precipitation of the silver as silver chloride. This conception would seem to be confirmed by the fact that the neo-silvol, which does not liberate silver ions or at best liberates them very slowly,[1] inactivates epinephrine slowly under the same conditions. However, such is not the case, for silver nitrate solutions (chloride free), even up to 10 per cent strength, inactivate epinephrine much more slowly than the colloidal silver preparations, with the exception of neo-silvol. The 1:1,000 concentration epinephrine retained part of its activity, as stated in the table, from five to ten days in the 10 per cent silver nitrate solution, and the 1:4,000 remained active for eight hours, while the 1:1,000 epinephrine in the 1:1,000 and 1:100 silver nitrate solutions lost its activity only after thirty days. These solutions would contain higher concentrations of ionized silver than would be found in the colloidal preparations used. It seems justifiable to conclude, therefore, that the inactivation of the epinephrine by the colloidal silver preparations was not due to the liberated silver ions. As epinephrine remained active for many days in neo-silvol and in gelatin and tragacanth solutions, the inactivation could not have been caused by the binding or absorptive powers of the colloids of the silver preparations. It was suggested by Dr. Sollmann that the alkalinity of the silver protein solutions might be the cause of epinephrine destruction; for alkalis inactivate or precipitate alkaloids. This was not the case, however. The reaction of these solutions that had been tested on the skin, three different samples of each drug, was determined by dialyzing them through collodion sacs, and the reactions (hydrogen ion concentration) were as follows: protargol, 6.8; argyrol, 9.0; solargentum, 9; neo-silvol, from 6.7 to 6.8. Thus, the protargol solutions, which inactivate epinephrine most rapidly, and the neo-silvol solution, which inactivates it very slowly, have approximately the same reaction, which is slightly acid, while argyrol and solargentum solutions are distinctly alkaline. Further, solutions of epinephrine, 1:4,000 and 1:1,000, with a hydrogen ion concentration of 8.8; i. e., distinctly alkaline, remained active for many days. Thus the reaction of the solutions was not the determining factor in the epinephrine destruction.

Protargol is said to be made with a peptone base, so that solutions of peptone and of egg albumin containing epinephrine were examined, but the epinephrine remained active for many days. Further than this, the cause of the inactivation of epinephrine by the organic silver compounds has not been investigated.

CONCLUSION

It has been shown that certain members of the organic silver compounds protargol, argyrol and solargentum, in the commonly used solutions, inactivate epinephrine within a few hours; therefore, if the local effect of epinephrine on the nasal mucous membranes is desired, it should not be used in combination with these substances or the mixtures should be freshly made. Neo-silvol and silver nitrate solutions inactivate epinephrine more slowly.

2103 Adelbert Road.

PRECOCIOUS PREGNANCY

REPORT OF EIGHT CASES *

HOWARD DITTRICK, M.B. (TOR.)
Associate in Gynecology, Western Reserve University School of Medicine; Visiting Obstetrician, The Retreat
CLEVELAND

Precocious pregnancy is the occurrence of gestation at an unusually early age. The development of ripe graafian follicles takes place long before puberty, and it is not uncommon to find one or, according to Chaddock, even a second pregnancy occurring before the onset of menstruation. An example among my own cases was that of a girl, aged 14, who was delivered at The Retreat, and who never had menstruated. Although pathologic conditions, such as tumors of the pineal gland, the hypophysis and the suprarenals, as well as a fibroma, multilocular cyst and sarcoma of the ovary, may have some influence on precocious menstruation, they do not seem to be a factor in precocious pregnancy. In 130 cases of pubertas praecox in the literature from 1658 to 1918, Lenz found only eleven early pregnancies. According to Munzner, the mental development occurs independently of physical development and corresponds more exactly to the age. It is therefore logical that pregnancy occurs seldom with pubertas praecox.

CASES IN THE LITERATURE

The youngest case of pregnancy, reported by a correspondent of the *Lancet*, is that of a Chinese mother and father, aged 7 and 8 years, respectively. The correspondent made inquiries through a Chinese friend in a neighboring city, and the facts were thereby corroborated. Doubt has been cast on this record, nevertheless. Dorland, for example, says, "Although sexual maturity has been reported in boys of 12, it is doubtless true that erection and ejaculation of semen has not attained fecundative power. Probably the youngest case of paternity is that furnished by Hirst, of a boy of 13 who impregnated his sister of 14. It is stated that spermatozoa generally first appear in the semen in the fifteenth or sixteenth year, and fecundity dates from this time."

According to De Lee, the earliest authentic pregnancy is reported by Bodd. The child was 8 years and 10 months old, and the baby weighed 3,500 Gm. Dorland gives as the earliest instance the case recorded by Tidy of a girl who first menstruated at 4 years, and was delivered of a living child when only 8 years of age. Wharton and Stille report an instance of a baby menstruating in her first year, and being delivered in her ninth year of a child weighing 7¾ pounds (3.5 Kg.). Pittman reports the case of a colored girl, aged 9 years, 24 days, 37½ inches (95 cm.) tall, and weighing 75 pounds (34 Kg.), delivered of a 7 pound (3.2 Kg.) baby. Gleaves [1] reports the birth of a 5 pound (2.3 Kg.) baby to a 10 year old mother. In June, 1910, the case is reported [2] of a 10 year old colored girl who gave birth to a 6¼ pound (2.8 Kg.) child. The maternal grandmother was 13 years of age when this mother was born, and consequently was a grandmother at 23 years of age. Edmondson,[3] in 1890, reported a mother, aged 11 years, 2 months, with a rigid os and torn perineum. Wehefritz [4] reports a mother, aged 11 years, 2 months, delivered at the eighth month of a baby weighing 3,700 Gm. She had the appearance of a girl of 18 or 20. Paternity was attributed to the stepfather. Kerns [5] delivered a mother, aged 11 years, 6 months, 21 days. Tacker [6] cites a mother of 11 years, 4 months. Scott [7] reports a mother of 12 and a father of 14 years. Boldt [8] reports a case of cesarean section in a child of 12 years, 8 months, with contracted pelvis and severe eclampsia. Harris,[9] in 10,000 cases at Johns Hopkins, had only two cases of pregnancy at 12 years. Williams [10] had three cases of pregnancy at 12 years and six at 13 years. In each instance there were twice as many negroes as whites. Wilkinson [11] reports a negro girl, aged 13 years, 9 months and 5 days, who gave birth to twins.

CLEVELAND CASES

In 3,321 births at The Retreat since 1869, this was the sixth confinement at 13 years or under. The patients in this institution are all white girls. Other cases of precocious pregnancy are as follows:

A mother, aged 13, delivered of a baby girl, paternity attributed to the foster-father.

A mother, aged 12, delivered of a baby girl, paternity attributed to a boy of 15.

A mother, aged 13, delivered of a baby boy; paternity not recorded.

A mother, aged 13, delivered of a baby girl, paternity attributed to the stepfather.

A mother, aged 13, delivered of a baby girl, paternity attributed to a boy of 17.

In addition to these, the Cleveland Humane Society records the following two cases:

A colored girl, between 10 and 11 years old, five months pregnant, asserted that a colored boy of 10 was the father. She left the city before the birth of the child.

A colored girl of 11 years, 11 months, gave birth to a child which showed signs of idiocy and lived only one year and seven months.

REPORT OF CASE

In a recent case at The Retreat, a girl, aged 11 years, 10 months and 22 days (as verified by the birth certificate) was delivered of a 6½ pound (3 Kg.) baby boy. Her mother had been divorced and remarried. According to the girl's story, the father was a lad of 18 years. There was a history of three menstrual periods immediately preceding the pregnancy. The young mother was white, was born in Croatia, and had been a resident of the United States for three years. Her body and breasts were well developed (mainly as a result of the pregnancy), and a small amount of pubic hair was present. Her height was 5 feet, 3 inches (160 cm.), weight 125 pounds (57 Kg.). The pelvic measurements were as follows: between the spines, 23 cm.; between the crests, 26 cm.; external conjugate, 18 cm. The first stage of labor lasted eleven hours, the second stage three and three-fourths hours, and the third stage twenty minutes. The position was left occipito-anterior, and delivery at full term was spontaneous. The perineum after delivery showed remarkably little cyanosis or edema, and there was not the slightest scratch or laceration, thus exhibiting the marked elasticity of the tissues at this early age. Both the mother and the baby did well.

PROGNOSIS AND MANAGEMENT

The common experience with these early primiparas justifies a good prognosis for mother and child. The child is usually small, with a soft head, whereas the

* Read before the section on Obstetrics and Gynecology of the Cleveland Academy of Medicine, Dec. 10, 1926.

1. Gleaves, C. W.: M. Rec. **48**: 715, 1895.
2. Am. J. Clin. Med., June, 1910.
3. Edmondson, R. H.: South. J. Homeop. **7**: 16, 1890.
4. Wehefritz: Monatschr. f. Geburtsh. u. Gynäk. **63.**
5. Kerns, W. W.: M. World **23**: 26, 1905.
6. Tacker, J. R.: Mississippi M. Month. **3**: 248, 1893.
7. Scott, N. S.: Precocious Pregnancy, J. A. M. A. **31**: 192 (July 23) 1898.
8. Boldt, H. J.: Post Graduate **20**: 1251, 1905.
9. Harris, J. W.: Bull. Johns Hopkins Hosp. **33**: 12.
10. Williams, P. F.: Precocious Pregnancy, Atlantic M. J. **26**: 465.
11. Wilkinson, D. L.: Precocious Pregnancy: Twin Births, J. A. M. A. **31**: 424 (Aug. 20) 1898.

pelvic bones of the mother are more yielding than in later life and the soft parts exhibit greater elasticity. It follows, then, that in borderline cases of pelvic deformity a test of labor is advisable, and that many who, at a maturer age, would require operative intervention will deliver spontaneously. Cesarean section will rarely be indicated. This feature has been noteworthy in the work at The Retreat, where we have to deal with young unmarried mothers. The old adage that "meddlesome midwifery is bad" is especially applicable here. As Harris points out, from a purely obstetric point of view these ages appear to be the optimal time for the occurrence of labor.

Clinical Notes, Suggestions and New Instruments

ARTERY CLAMP AS A BETTER ANTRUM PUNCH

LOUIS M. PEARLMAN, M.D., NEW YORK

The many varieties of antrum punches on the market are a result of their frequent inadequacy. The curved tonsil artery clamp is to be found in the instrument cabinet of every

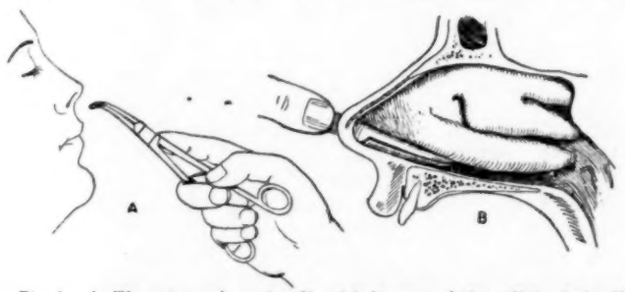

Fig. 1—*A:* The artery clamp handle with its curved tip well lends itself to the grasp, introduction and puncturing of the antrum. *B:* In the introduction of the clamp in the nasal fossa, the point of puncture can be carefully selected by the touch, because the blunt and smooth tip does not cause bleeding when it comes in contact with the mucous membrane, as sharp instruments frequently do.

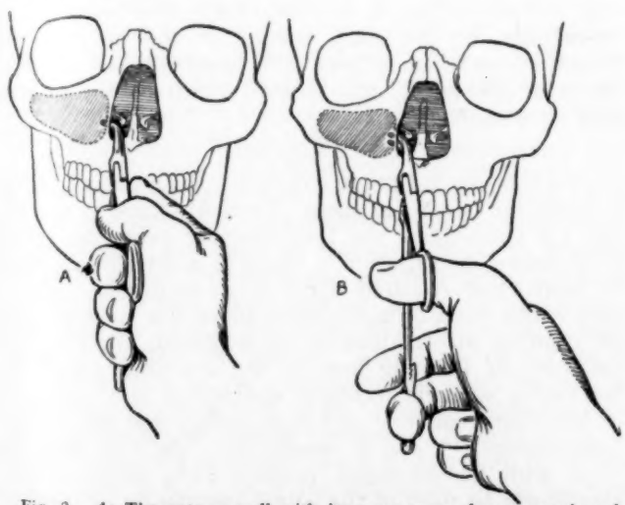

Fig. 2.—*A:* The antrum wall with its mucous membrane coverings is easily punctured with the tip of the clamp; there is less bleeding than when the customary sharp instruments are used; the handle affords an excellent grasp for low puncturing of the antrum wall. *B:* The opening of the antrum can readily be enlarged by a forcible spreading of the handle of the artery clamp, as is seen at the tip of the clamp in the illustration.

otolaryngologist, and this makes a surprisingly good antrum punch.

The use of the curved tip tonsil artery clamp has proved by experience to be a great improvement in the puncturing of the antrum.

1 West Eighty-Sixth Street.

Special Article

ALTERING THE MEDICAL CURRICULUM *

RAY LYMAN WILBUR, M.D.
STANFORD UNIVERSITY, CALIF.

The medical curriculum has been the apple of discord thrown regularly into the midst of every medical faculty and of every other medical group interested in the advance of medical education. It has had its share of praise and blame. It has become something of a fetish to be guarded by boards of medical examiners and by the overdepartmentalized members of our medical faculties. In one way it symbolizes our efforts to date to bring into a short space of medical training all that laboratory science and clinical experience have contributed to the diagnosis and care of the sick. As it stands now it is a wofully inadequate structure which in spite of the best of spirit has not served to give those who have struggled and suffered through it the capacity to practice medicine or surgery.

The curriculum is simply a compromise effort on the part of those looking backward and those looking forward in the field of medicine. It is neither wholly good nor wholly bad. Its most marked defect is its inelasticity and the fact that it has set up certain compartments of medical knowledge with vigorous and sincere guardians who spend more time defending the walls of their cells than they do in making honey. It should be fluid, responsive, progressive, and always ahead of the present. For the most part it is static, rigid, and shot full of antique methods, ideas and procedures. Its futility is best disclosed by the frequent attempts to legislate the details of a curriculum either in medical bodies or in state legislatures.

Viewed in another way, the medical curriculum is an attempt to make practical use of a certain number of months of a student's time in order to give him training that will serve him in one of the great professions. This training has to be both of a general character and technical and specific. The fundamental aim of the training should be to compel scientific thinking, impart medical knowledge, and give the technical training of the laboratory, the clinic and the operating room. As at present constituted, it strives to do altogether too many things. Fortunately, we now face a situation in which the volume of medical information has become so extensive that this very pressure of increased facts is compelling readjustments, attempts at coordination, and a restudy of the whole question of the content of the course leading to the degree of doctor of medicine.

ARTIFICIAL DIVISIONS

One of the outstanding defects in college, university and professional education has been the academic departmentalization of human knowledge. This has been particularly harmful and obnoxious in the medical school, where unripe specialization has been a curse. It is apparently normal for the majority of human minds to seek to divide up our intellectual territory and then to begin a classification and distribution of knowledge in accordance with this artificiality. In the medical school we have tried numerous divisions based on everything from common sense to the whims of spoiled

* Read before the Annual Congress on Medical Education, Medical Licensure and Hospitals, Chicago, Feb. 14, 1927.

members of the faculty, and have had professorships ranging from professor of syphilis to professor of proctology. When once such artificial divisions have been made, more energy is often spent on administrative devices to compel students and patients to be brought into contact with the departments and divisions organized than in trying to see what can be done to advance a branch of the science of medicine. There is a unity about medicine which cannot be interfered with without serious handicap. The unit is a human being with a central nervous system with all its peculiarities, controlling a particular body which by the laws of heredity is different from any other body that has ever been or ever will be in this world. When we begin to divide up such a unit on an anatomic or physiologic or pathologic or mental basis, and to pick at these divisions piecemeal and apart from the unit itself, we become increasingly inadequate in that degree to which we overspecialize. The more mechanical the procedure adopted, the more inefficient is the relationship established to the mental machinery or personality of the patient.

FAULTS OF PRESENT CURRICULUM

As at present constituted the medical curriculum is too congested, is in the hands of too many specialized instructors, and offers an inadequate period of actual contact between medical students and patients. There is altogether too much association of the student with the discharges and extracts of patients, and too many long-winded and painful lectures, which are fine mental exercise for the lecturer, and too often needed rest periods for the students. One of the simplest and most reasonable devices for the cure of the medical curriculum would be to make all lectures optional and have no examinations on lectures. No one can teach the art or the science of the practice of medicine by the lecture system. One can teach medicine by example and can guide others in their own processes of self education. The more work done by the student and the less done by the teacher, the better the product. The laboratory and all its attachments have been of enormous service to medicine, but a disproportionate part of the time of the student is used in the medical curriculum for such courses. Aside from the essential laboratory technic, it is more important that a student should be trained in all of the various methods of physical examination and in accurate observation and deduction than that he should be trained in refined laboratory technic. It is interesting from a historical standpoint to note that when the laboratories came along they were captured in an educational sense by clinical medicine, but they now have captured their captor.

The time is about ripe for a readjustment of the relationship of medical instruction to the fundamental sciences on which it rests. Not many years ago physics and chemistry were included as part of the medical curriculum. At the present time anatomy, including histology, neurology and embryology, physiology, physiologic chemistry and bacteriology, are included in some degree in all medical schools. In fact, there has been a steady insistence on the part of the medical profession that these basic sciences belong in the medical curriculum and nowhere else. This attitude has been a definite obstacle to the advance of physiology and anatomy in America. Physiology, anatomy and bacteriology belong primarily with the general courses of the university. They should offer opportunities to students who have no desire to become medical practitioners. They can offer an unusually satisfactory training to those seeking a sound general education as a basis for modern living. Anatomy is too often viewed as mere dissection of the human body. Its relationship to all phases of growth, development, nutrition and everything pertaining to structure is overlooked. Biology, general physiology, physiologic chemistry, hygiene, bacteriology, pathogenic and nonpathogenic, are of increasing importance in all education. Just as medicine has in the past forced chemistry and physics back on to the college and the university, so it should pass these fundamental subjects back to the university and devote its attention to the training of students who come to learn to practice medicine and who come to the medical school at the time when patients are required for instruction. The constant insistence on having physicians as instructors in physiology and anatomy in the past is not so evident now when more of our surgeons are anatomists and more of our physicians have some training in physiology. The medical school has enough of a problem to train practitioners.

These basic sciences need to be set free from the limited claims of the medical curriculum. The men in them need to go into their respective fields in the broadest possible way, using all related information in the hope that advances may be made which can later be brought into medicine. America has been distinctively defective in its research work in the fundamental sciences. The limitations of the various departments by the medical school has played its part in this unfortunate condition. With pharmacology including therapeutics, pathology and advanced bacteriology as a necessary constituent part of the work which is grouped around the outpatient clinic and the hospital, those essential scientific, laboratory and other facilities for the training of practitioners are available. Both the laboratory and the clinic should be conducted in the stimulating atmosphere of research. Thus the medical student will learn to think of his life work in relationship to a growing science which is reacting promptly to new ideas and new discoveries. While he can cover only a small portion of established scientific and medical knowledge, he can learn enough of the fundamental principles on which all medical science is based to select much of the useful and discard much of the useless and irrelevant.

INSTRUCTION OF A GENERAL PRACTITIONER

Just how much time is required to turn out a general practitioner is hard to state. Certainly there is no reason for considering the four calendar years the result of a sacred dispensation. There is a certain sequence of instruction required, there is an enormous vocabulary which must be assimilated, there is a large volume of needful information to be acquired, there is the necessity of learning how to use the library and the laboratory with its technical equipment, and above all of learning something of human beings and their social relationships. I see no reason why the full calendar year, with the exception perhaps of a single month, should not be used in the actual instruction of medical students. The patients are available. Often the summer months provide the best opportunities for the study of special conditions. There is no need of working for the whole year at the hectic pace required by taskmasters who measure education in terms of talk. A limitation of classroom instruction to certain months and the extension of hospital and outpatient responsibility throughout the year would be distinctly advantageous.

After a thorough training in elementary work, which should be required regardless of the period of time

spent in its acquisition, a proper knowledge of the use of the English language, probably one or more other languages, and various other things which go to make up a general education, and physics, chemistry, biology, anatomy in its various phases, physiology and elementary bacteriology, the medical course proper should through proper use of the outpatient and the bed patient train a student in the fields of pathology, pharmacology and therapeutics, general medicine, general surgery, public health, obstetrics and gynecology. Every effort should be made to prevent overdivision of these subjects into subdivisions where ardent and enthusiastic specialists may burrow in by the sheer force of their turning. Sometimes the specialists remind me of things that happen at the rear end of an automobile when it bogs down in the mud. The faster the wheel spins, the deeper the hole. The ordinary specialist is a menace as a teacher for the student studying for the degree of doctor of medicine. He turns too brilliant a light on too small an object. His methods are too refined for the beginner. He is apt to require elaborate contrivances and procedures for diagnoses that are difficult.

BASIC NEEDS

We suffer greatly from standardization of ideas and of educational content in preparation for medical studies. We need to seek deliberately for wide variability in method if we expect to advance. The amount of medical information that is actually required of the young doctor in order to start out to practice medicine need not be so very extensive. If proper physical examination has become second nature to him and he understands a few emergency procedures and something of minor surgery, has a clear understanding of obstetrics and knows something of infant feeding and of the simple respiratory and digestive tract diseases, and has a knowledge of people and how to deal with them, he can, if he has been taught to look at facts squarely, by experience, industry and reading become a reliable practitioner. Unfortunately, the very minutiae required in many parts of the medical curriculum prevent adequate training of the powers of observation and of reasoning. The lecture system thrives on unusual cases. The medical teacher should leave rare cases of all sorts to the medical societies and to those who are instructing specialists.

The curriculum often misguides individuals into the belief that they have completed their education when they have wandered successfully through its intricacies and mazes. The man or woman who is to practice medicine in our country in the next generation will have to face those new conditions which have arisen from a prolongation of life, and from other factors associated with the control of disease. Above all, he will need to have a grasp of the various mental states ranging in all degrees from normal, if he is to meet individual as well as collective human problems. It is difficult to train a man or a woman to work largely with his hands and senses in the care of the sick when he has been up in the present "pass the buck" atmosphere of the ordinary hospital mechanism for the diagnosis and care of the sick. The fumbling period that is characteristic of all beginners is necessarily prolonged when a man has more knowledge of disease and of machinery than he has of people. Unfortunately, the very intricacies of our established medical institutions has made individuals into parts of a great machine. The curriculum itself has a machine-like quality. The leaders in the different broader fields of medicine should be set free and given a certain period of time in which they are to bring about adequate instruction of their students in any way that they may think desirable. We must eliminate specific hours for this and that in a specific subject, even though there is a constant striving on the part of the medical faculty to have this sort of subdivision. We need to get away from the blight of too many courses and the deplorable pedagogical technic of many medical teachers.

It would make changes more readily obtainable and avoid the palsied or dead hand in the curriculum in medicine if all executive appointments and all clinical assignments in all parts of the medical school were made annually by the president of the university on the basis of immediate past achievement and future promise.

TIME REQUIRED

I think that after the preliminary period of training in the basic sciences, including physiology, physiologic chemistry, anatomy and its subdivisions, and perhaps bacteriology has been passed, three calendar years, with one month of vacation each year, is a sufficient time for a student to have contact with patients, laboratories and teachers, to acquire the right to begin the practice of medicine. This period should be inclusive of the so-called intern year. A large part of this time could profitably be spent in the outpatient clinic. The care of the ambulatory sick is to be an increasing responsibility of the medical profession, as is the guidance of those seeking to retain a normal physical condition. The real test of the physician is whether patients return to him for further advice and treatment. It is no test of success to have a patient staked out in a hospital bed where the physician comes each day for a few minutes and the patient is too ill to move. The regular physical examinations which will be required more and more of physicians in the future demand an adequate understanding of the early stages of disease and of the normal control of the habits of the human body. Human understanding must be brought about by responsible human contacts. It is not what we know but what we actually are able to use that counts in medical practice. The outpatient clinic is the place for the medical student to learn by experience how to practice medicine.

SUGGESTIONS

In brief then, my suggestions are: Retain only the broader divisions in the medical school and curriculum; make all lectures optional and all examinations practical; free physiology, anatomy and bacteriology from their present slavery to the medical curriculum and the medical school. After adequate fundamental college training which is not too specific as to details, give the prospective medical student who already knows something of chemistry, biology, anatomy and physiology three calendar years of actual contact with the inpatient and outpatient and the laboratory, under the guidance of a teacher but doing most of the work himself.

The Steps in Constructing the Curriculum.—The construction of the school curriculum in physical education requires four steps: (1) an analysis of the influences of social changes on the activities of children and of the status of physical education in the community as a whole; (2) a formation of the special aims or objectives of physical education; (3) the formulation of a school program in physical education, and (4) the formulation of detailed courses of activities, with a specification of materials and an outline of procedures for the convenience of teachers and children.—Hetherington: School Program in Physical Education, p. 1.

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SATURDAY, MARCH 5, 1927

"THE PERILS OF MAGNANIMITY"

Not only physicians but also sociologists, psychologists and economists have on frequent occasions in recent years devoted pages of anathema to the curse of philanthropy. Ever since it was realized that pauperization resulted from much of the practice of free medical clinics, committees of physicians and investigators have issued pronouncements against uncontrolled application of charitable funds to medical care. The great problem of the past quarter of a century has been to use for the public good the benefits to be derived from medical science. The possibilities for good logically have made medical research and medical education the beneficiaries of more philanthropy than has been accorded to art institutes, sculpture and general cultural and municipal improvements. They have also given rise to the new professions of social worker, public welfare counselor and the executive secretary, whose sinecure recently attracted the vitriol of Mr. Mencken's pen.

Prof. Hans Zinsser of the department of bacteriology in the Harvard Medical School, under the attractive title which heads this comment, cleverly tosses a series of shafted and veiled barbs into the control of medical education exerted by the General Education Board and similar endowments. In his contribution in the *Atlantic Monthly*, he asserts that the basis for such dissatisfaction as may exist with the work of such directorates is "a foreboding that the guidance of medical education is to a considerable extent passing out of the hands of the universities themselves into the hands of permanent or, at any rate, self-perpetuating bodies of gentlemen who, by the very force of the established relations, cannot help extending their influence over all the important centers of American education." Indeed, Dr. Zinsser seems to find most of his own disapproval of the situation in the fact that the leadership that has brought about the present high state of American medical education has largely fulfilled its purpose and is now without reason for perpetuation. The permanent existence of vast sums that must be applied to specific purposes creates a situation in which those who desire the use of such funds must conform to the requirements set up by the administrators in order to secure the advantages accruing through grants of money. Thus, medical education, according to Dr. Zinsser, is being compelled into fixed lines and systems in which initiative is destroyed and freedom of development made impossible. The situation is not unique in relation to medical education, which is the one point concerned in Dr. Zinsser's discussion. The existence of endowments for the perpetuation of the fight on animal experimentation has been a curse to medical progress in many communities, and has required the spending of equal sums to combat attempts at securing reactionary legislation. The existence of tremendous funds whose income must be devoted to certain types of public welfare work has resulted in bureaus which endeavor to promote such work without proper medical cooperation and indeed sometimes with antagonism to all the forces that make for individual freedom and that oppose paternalism and pauperization.

As a result of the dominance of fixed ideas in the field of education, Dr. Zinsser sees already a uniformity of organization in the clinical departments of all the medical schools that have received support. He sees universities deprived of autonomy of decision both as to policy and as to details of method. He notes that similar developments have been completely avoided in the activities of the International Health Board, but he does not reason from observation that this may be largely a matter of policy with the present directorate of the International Health Board, and that there is no guarantee as to future developments of that work. Dr. Zinsser's note of warning against standardization of medical education, through the economic pressures exerted by philanthropy, is timely. The medical professions in various communities have already protested against attempts by health demonstrations and similar movements to destroy initiative and individual relationships in medical practice.

THE PAIN OF GASTRIC ULCER

In his classic discussion of symptoms and their interpretation, Sir James Mackenzie [1] argued that the recognition of the factors concerned in the production of pain is of first importance in the study of disease. Not only is pain the most important of complaints, he adds, but it is the most instructive diagnostic sign, for the study of its mechanism often gives the key to the best means for attaining relief. The problem of pain varies, however, in different parts of the body. The cutaneous surfaces are extremely sensitive to injury of various sorts. The deeper tissues of the external body wall are also sensitive to pain, and generally in a less degree than that of the skin, but the relative sensitiveness of parts is not well understood. The viscera, on the other hand, are often insensitive to

1. Mackenzie, James: Symptoms and Their Interpretation, New York, Paul B. Hoeber, 1913.

forms of stimulation that produce pain in the external body wall. Such differences are doubtless associated with the specific peculiarities of the nervous connections of different parts of the body, the presence or absence of special sensory end-organs, and the character of the innervation.

These comments apply to the mechanism of pain in gastric and duodenal ulcer. Here the nature of the irritating stimulus has often been under debate. Is it a mechanical one dependent on coarse food masses or alimentary débris? Is it some feature of contractile processes in peristalsis, perhaps aggravated in character, or is it chemical in nature? The evidence has been conflicting and the deductions from it contradictory. The fact, pointed out by a recent writer, that gastric distress is not experienced every day by persons with perfectly normal stomachs, the contents of which may have a relatively high degree of free acid, is in itself conclusive evidence that normal gastric acidities do not produce distress in the normal stomachs of normal persons. Palmer [2] has recently shown that the introduction of 0.5 per cent hydrochloric acid solution into normal stomachs may fail to produce sensation or may arouse epigastric burning or warmth. The rapid entrance of acid into the duodenum may produce nausea and vomiting. Flushing of the face and headache have been seen occasionally as the result, apparently, of either chemical or mechanical irritation of the duodenum. In patients with a gastric or duodenal ulcer known to be sensitive to the normal irritant, the injection of 0.5 per cent hydrochloric acid solution produced distress which the patient identified as his typical distress in more than 95 per cent of the tests. This distress was produced and relieved at will by perfectly physiologic concentrations of acid. Spontaneous distress from ulcer was relieved similarly by emptying the stomach, and initiated again by reintroduction of the aspirated content. Hence, the gastric content contained an irritant to the pain-producing mechanism, but gastric juice whose free acidity had been neutralized by alkali did not. Hydrochloric acid, therefore, is the irritant common to those different solutions which constituted an adequate stimulus to the pain-producing mechanism. At times, the relationship between the concentration of acid and the severity of the pain seemed to be an almost quantitative one.

It should not be assumed that hydrochloric acid in undue concentration constitutes the sole stimulus to the pain-producing mechanism of peptic ulcer. Pain from mechanical traumatism is known to occur; and the disagreeable sensation apparently may arise spontaneously when the gastric contents are acid-free. According to Palmer, in sufficiently sensitive mechanisms, distress may be produced by the injection of solutions of other chemical irritants, such as sulphuric acid, acetic acid and sodium hydroxide. In all cases, the distress produced is relieved by the removal of the chemical irritant from the stomach or by its neutralization or by both. This evidence, he concludes, further supports the view that the action of hydrochloric acid is that of a chemical irritant; it is presumably the one normally present in the gastric content which constitutes an adequate stimulus to the pain-producing mechanism of a sensitive peptic ulcer.

2. Palmer, W. L.: The Mechanism of Pain in Gastric and in Duodenal Ulcer: II. The Production of Pain by Means of Chemical Irritants, Arch. Int. Med. **38**: 694 (Dec. 15) 1926.

DEATHS OF PHYSICIANS PUBLISHED IN 1926

During 1926, THE JOURNAL published the obituaries of 2,677 physicians of the continental United States. This number is 194 larger than the number published during 1925.

Deducting the number of deaths published in 1926 from the number of medical graduates in that year (3,962) leaves a net increase in the ranks of the profession of 1,285. The census bureau estimates that the population of the United States increased 1,492,000 during 1926. The ratio, therefore, between the net increase in physicians, as computed, and the increase in the general population was one new physician to about 1,161 new inhabitants.

Ages.—The average age of the physicians whose obituaries were published was about 62.8 years. Twenty-four of them died in the age period 25-29; forty-seven died between 30 and 34 years of age; sixty-two between 35 and 39; 114 between 40 and 44; 183 between 45 and 49; 264 between 50 and 54; 336 between 55 and 59; 384 between 60 and 64; 389 between 65 and 69; 337 between 70 and 74; 258 between 75 and 79; 151 between 80 and 84, and 128 at or above 85 years of age. Although probably not significant, the percentage of physicians in certain states who lived to be more than 85 years of age is interesting, the percentage in California being 8, in Illinois 7.8, in Missouri 6.6, in Massachusetts 4.9, in Ohio 3.4, in Indiana 3.4, in New York about 2 and in Pennsylvania about 2. March was the month of most deaths, with 325.

Accidents and Homicides.—There were ninety-four physicians who died as the result of accidents. The automobile was responsible for thirty-six; falls, sixteen; railroads, nine; drowning, nine; street cars, three; burns, two; firearms, two; asphyxiation, two; airplane, one. Of the nine homicides reported, three were due to bandits, three to other assailants, and one to a maniac. The circumstances were not reported in two cases.

Suicides.—The number of suicides decreased from fifty-nine published during 1925 to thirty-seven published during 1926; fourteen were by firearms; eight by poison; four by hanging; two by incised wounds; one each by drowning and gas; in seven cases the method was not reported.

Causes of Death.—Heart disease was the most common cause of death, as it was in 1925. Some

contributory causes, however, are included in the tabulations, as they have been in former years. A report stating that the cause of death was "chronic nephritis and heart disease" is so published in THE JOURNAL, and is recorded on the charts under both diseases. The same rule is followed, to use another example, when a report states that "influenza and pneumonia" were the causes. The usefulness of certain causes from a statistician's point of view may thus seem to be reduced. Their news value, however, would seem to be enhanced. Of the 782 reports which mentioned heart disease, endocarditis or myocarditis was specified in 194, angina pectoris in 110 and pericarditis in two. Cerebral hemorrhage was the second most frequent cause reported, with 327 deaths; 13.1 per cent of the cerebral hemorrhage deaths occurred before the physicians were 55 years of age; thirty-five other deaths were reported due to paralysis. Pneumonia, the third most frequent cause, was reported in 303 cases, and in seventy-two bronchopneumonia was specified. Fourth on the list was nephritis in 224 cases, with acute nephritis specified in nineteen. Cancer caused 190 deaths and was fifth on the list; the stomach and liver were affected in sixty-six, the intestine in twenty-four, the prostate in sixteen, the buccal cavity in thirteen, the skin in five, and in sixty-six the part affected was not specified; 90.5 per cent of the cancer deaths occurred after the physicians reached 70 years of age. Arteriosclerosis caused eighty-nine deaths; senility was given as the cause of eighty-seven; tuberculosis caused seventy deaths, with fifty-eight specified as pulmonary; influenza, sixty-one; appendicitis and typhlitis, forty-one; embolism and thrombosis, forty-one; septicemia, thirty-nine; pernicious anemia, twenty-nine. Diabetes caused the death of fifty physicians, 42 per cent of them occurring after the physicians were 70 years of age. Typhoid, which years ago was prominent in this place, almost disappeared during 1926, causing only two deaths. General paralysis of the insane caused sixteen deaths; meningitis or encephalitis, eighteen, and leukemia, which in 1925 caused three, in 1926 caused twelve. The cause of death was classified as undetermined in thirty-six cases; at least eighteen were so listed because replies to inquiries were not received.

Positions.—Among the decedents were 153 who were or had been teachers in medical schools; there were 165 who served in the World War; seventy-eight who served in the Civil War, and thirty-eight veterans of the Spanish-American War; fifty-seven had been health officers; forty-seven, members of boards of education; thirty-six, members of boards of health; thirty-six, members of state legislatures; thirty-three, druggists; twenty-eight, coroners; twenty-seven, mayors of municipalities; sixteen, members of state boards of examiners; twelve, postmasters; twelve, bank presidents; nine, dentists; four, missionaries; three, editors; three, judges; six, ministers, and one, a lawyer.

Association Officers.—Among the decedents is one former vice president of the American Medical Association; two members of the Board of Trustees, one of whom died during his term of office; twelve members of the House of Delegates, and two members of councils.

Current Comment

OUR CHANGING OCCUPATIONS AND INTERESTS

Inventories made in ten or twenty-five year periods help to indicate the changing trend of human interests. A revolution in the social customs of our people is revealed by the fact that there were only 209 plumbers, gas fitters and steam fitters for each million of our population in 1870, whereas there were 1,956 such workmen, an increase of 577 per cent, in 1920. The disappearance of primitive methods of sewage disposal and of hundreds of thousands of cases of typhoid is reflected in this fact. Since 1870, as pointed out by the National Industrial Conference Board, the number of blacksmiths per million of population has decreased 50 per cent, and the horse is an infrequent visitor to the city streets. The rise of the kitchenette and of the barracks method of living is reflected in the decrease of 40 per cent in the proportionate number of brick and stone masons, with an increase of 55 per cent in iron and steel workers. Apparently disturbances and arguments among our citizens continue at about the same rate, since the lawyer proportion is about the same. The spiritual needs are also accommodated by an equal proportion of clergymen. But the proportion of physicians and surgeons to the population has decreased by approximately 15 per cent, and the proportion of dentists has grown 162 per cent. One of the greatest increases has come in that new trade which is responsible for the alleged beautification of the populace. The number of barbers, hairdressers and manicurists has risen 229 per cent. Obviously, also, the taking of stock and the keeping of records is clearly reflected in the rise of white-collar workers. The proportion of clerical and office employees to the population has risen 1,286 per cent since 1870. All these figures have an important bearing on the practice of medicine. The rise of preventive medicine is definitely associated with these changes in human occupation. In this connection it is interesting to note another inventory revealing the changing trend of medical practice. A list of the advertising material in the pages of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION over the past quarter of a century indicates a constantly increasing proportion of space devoted to biologic preparations, dietary products, physical therapeutic apparatus and general material, as contrasted with the preponderance of space devoted to drug products and particularly combinations of drugs at the beginning of the period. With the rise of modern pharmacology, attention is being concentrated on the use of simple drug products for specific purposes, rather than the attempt to control every symptom

of some physical condition by a combination of remedies. The development of our knowledge of vitamins and of the use of foods and physical agencies in the control of disease has been one of the major accomplishments of the twentieth century.

THE PROMOTION OF CALCIUM ASSIMILATION DURING LACTATION

Lactation is a physiologic process that makes unusual demands on the body. Some idea of what these may mean at the height of milk production is indicated by the recently reported record of a Holstein-Friesian cow that in a month had produced in milk two and one-fifth times her weight. Her highest production for one day was 137.4 pounds of milk and 5.93 pounds of butter. Such performances, like all secretory activities of the mammary gland, call for a supply of nutritive materials out of which the various constituents of the milk can be either directly derived or manufactured de novo. In all species, lactation therefore may act as a drain of greater or lesser magnitude on the resources of the organism. Experience indicates that the drafts on the antecedent nutrient reserves may not infrequently lead to some depletion of the bodily stores. There may be a "negative balance" of mineral constituents, notably calcium, as a result of the exceptionally large proportion of this element which milk contains. It is necessary that such losses be replaced readily or averted if the nutritive equilibrium of the milk-yielding organism is to be preserved. It has been well established that the assimilation of calcium in the growing organism may be facilitated in a noteworthy degree by an abundance of sources of vitamin D in the diet as well as by its apparent analogue, exposure to ultraviolet radiation either in the form of the sun's rays or through artificial means. The production of milk is in many ways analogous to the growth of a special tissue. It involves the construction of a fairly uniform mixture of organic and inorganic substances out of the circulating mediums of the body. Recent studies at the University of Wisconsin by Hart, Steenbock, Kletzien and Scott [1] have clearly indicated, through experiments on goats, that the antirachitic factor of cod liver oil is as effective an agent in promoting calcium assimilation in a lactating animal as it is in a growing one. In view of the impending attempts to introduce "concentrates" of cod liver oil as sources of the effective vitamins, it should be noted that the Wisconsin investigators failed to secure improvement in calcium assimilation through administration of non-saponifiable fractions of cod liver oil (which contain the antirachitic factor) unless they were fed dissolved in oil. These studies point clearly to the desirability, in human nutrition, of insuring a good supply of vitamin D, the antirachitic vitamin, throughout the period of lactation. Obviously also calcium itself must be available in adequate amounts in the diet of the mother.

1. Hart, E. B.; Steenbock, H.; Kletzien, S. W., and Scott, H.: Dietary Factors Influencing Calcium Assimilation: IX. Further Observations on the Influence of Cod Liver Oil on Calcium Assimilation in Lactating Animals, J. Biol. Chem. 71: 271 (Jan.) 1927.

Association News

ANNUAL MEETING OF THE BOARD OF TRUSTEES, HELD IN CHICAGO, FEB. 17 AND 18, 1927

An informal meeting of the Board of Trustees of the American Medical Association was held in Chicago, February 17, and the regular meeting convened the following day, Friday, February 18. All the trustees, the President, the President-Elect, the Treasurer, the Secretary and General Manager, and the Editor were in attendance.

At this meeting, the attention of the Board was given to its annual report to be submitted to the House of Delegates at Washington, to annual budgets, to committee reports, and to other important matters in connection with the business of the Association. The action taken by the Board of Trustees and the complete reports of each of the departments of the American Medical Association will appear in the report made by the Board of Trustees to the House of Delegates. This will be published in the issue of THE JOURNAL appearing one month preceding the annual session, which will contain also reports of the various councils and resolutions prepared for introduction at the Annual Session by members of the House of Delegates.

ANNOUNCEMENT OF COOPERATIVE COMMITTEE ON FRACTURES

The Cooperative Committee representing the Section on Surgery, General and Abdominal, and the Section on Orthopedic Surgery, was appointed to feature "Fractures" at the Washington Session of the American Medical Association and to stimulate interest in this subject among all the members.

To awaken interest, the committee has planned for this year's symposiums an exhibit and a series of lantern slide and motion picture demonstrations. The program has been arranged to present the diagnosis and treatment for a few of the commoner types of fractures of the extremities. The presentation has been prepared for the general practitioner of medicine rather than for the surgeon. Simple principles will be emphasized rather than minute details.

The symposiums will be held at joint meetings on Wednesday, May 18, in the morning under the auspices of the Section on Orthopedic Surgery, and in the afternoon under the auspices of the Section on Surgery, General and Abdominal. An unusual group of speakers, including two foreign guests, have agreed to participate. The complete program, including those who open the discussions, will be published in the Washington number of THE JOURNAL, April 16.

Four demonstrations will also be held in the Motion Picture Theater, illustrated by lantern slides and films, on: Mobilization Treatment of Upper Humerus Fractures; Reduction of Fractures of Shaft of the Femur; How to Reduce Simple Fractures and Why, and Bone Repair Following Fracture. The names of the participants will also be announced in the Washington number of THE JOURNAL.

In the Scientific Exhibit, prominent space will be allocated to the Committee on Fractures. The following subjects will be illustrated in separate booths: (1) splints and materials for hospitals; (2) splints and materials for the physician's office; (3) splints and materials for the physician's automobile; (4) the preparation and application of plaster bandages; (5) specimens and other material illustrating the process of bone repair; (6) the details of traction and suspension apparatus; (7) illustrations of typical cases of fractures of (*a*) shaft of the femur; (*b*) shaft of the humerus, and (*c*) lower radius; (8) cadaver preparations illustrating fractures of the lower end of the radius, and (9) fracture cart for ward use.

Seventy physicians have agreed to cooperate in a continuous demonstration in the various booths.

WILLIAM DARRACH, M.D.
NATHANIEL ALLISON, M.D.
KELLOGG SPEED, M.D.

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE AND HOSPITALS

Held in Chicago, Feb. 14, 15 and 16, 1927

DR. ARTHUR DEAN BEVAN, Rush Medical College, Chicago, in the Chair

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

FEBRUARY 14—MORNING

Need of Teaching Medical Ethics

DR. ARTHUR DEAN BEVAN, Chicago: This article appeared in THE JOURNAL, February 26, page 617.

DISCUSSION

DR. JABEZ N. JACKSON, Kansas City, Mo.: The Board of Trustees passed a resolution, which is before you for action today, based on the consideration of two different points of view. I think we all fundamentally agree that the most important thing in an individual or in an institution is character, and that character is based on the fundamental conception of what is right and what is wrong. The "Principles of Medical Ethics" of the American Medical Association is the biblical instruction which endeavors and attempts to make a Christian out of a man in the practice of medicine. I do not know any class of people living in this world who necessarily must depend on the evolution of a correct character as do medical men. Probably not another profession is less understood; perhaps not another profession that depends so much on faith. The medical profession, if it expects to deserve and hold the confidence of the people, must measure up to that fundamental faith that people have in the integrity and in the character of the medical man. Frankly, I think we are ofttimes as individuals single minded, and in the last generation the mind of the medical man has been absolutely absorbed in one thought: the scientific advancement of medicine. The old timers dwelt on the subject of ethical conduct. As a matter of fact, they had a code of ethics. I am not particularly concerned in this discussion in ethics from the standpoint of a code. There is always room for honest differences of opinion on matters of interpretation, but there are at least certain fundamental principles on which honest integrity of character in a man is established, and these are embodied in the "Principles of Medical Ethics" as prepared by the Americal Medical Association. I believe an education that attempts simply to develop the mind of a man without any attention to his character is fundamentally a weak education. I therefore believe it is just as important and should be recognized as such by this organization to start in the beginning of the plastic period of the young man entering medicine to teach him fundamental principles of character as interpreted by the sages who have gone before. Just as we have a compulsory course of lectures on physiology or anatomy, there should be compulsory lectures on the principles of ethics of the medical profession. I would put the lectures on in the freshman year, and would not object if they were repeated. It should be driven into the man that he is starting in a great profession, a profession that demands the trust of the race, a profession that is almost sacred in its service. If we develop in that man a character by which he will be a credit to the profession to which he belongs, and an honest servant of the people, we likewise shall be able to understand our own principles and answer the attacks from without.

DR. A. T. MCCORMACK, Louisville, Ky.: Representing the commonwealth of Kentucky by special delegation, I would move that this conference approve in principle the address of our chairman and recommend to the American Medical Association and its various agencies for activity that they formulate these plans so definitely that all of us may follow them in helping to put our profession on that high plane on which is is determined it will stand.

The motion was carried unanimously.

The University and Medical Education

DR. FRANKLIN C. MCLEAN, Chicago: The union of medical education and the university which has progressed so rapidly in America within the last two decades is in fact, although it has not always been consciously recognized as such, a tacit recognition of the scientific aspirations of American medicine. It is clear that in taking over the affairs of medical education the university assumes a double function in education, the function of the university and the function of the medical school. The medical school, by tradition and in fact, has the responsibility of furnishing the people with well trained physicians in sufficient numbers; the university, as such, is concerned only with research and with the conservation and propagation of knowledge, without immediate concern for the use to which its product is to be put. Since the American university is not a single, well defined concept, we must expect to find among the individual universities a diversity of attitudes toward this problem.

It is only natural that the first concern of medical education has always been with the teaching of accumulated experience, consisting of facts and theories, or, in short, the subject matter of medicine. About this aspect of the teaching of medicine has centered most of the current discussion of the curriculum, and in the presence of an overabundance of subject matter, which has always confronted medical education and always will, it is manifestly impossible to determine the ideal subject matter content of a medical education. That one single formula is not universally acceptable is abundantly shown by the diversity of the curriculums in various schools, and by the growing tendency to abandon the secondary school type of fixed curriculum which has been brought by the medical schools into the universities.

So far as subject matter is concerned we need not so much a new curriculum as we need a new attitude toward the curriculum. The fixed curriculum is contrary to all principles of higher education and a freedom of election within the individual university comparable at least with the diversity of subject matter taught in various medical schools, and by various instructors in the same subject, could be adopted by any university without endangering the structure of medical education. The present system approaches an absurdity when a new course is offered within a medical school, and attendance on this course is immediately required of all students.

The quiz compend and the recitation course have been prominent in medical education. They are disappearing but they still exist. They are pernicious and subversive to the achievement of the aim I have stated, and their only object is to cram facts into students. They do not have a place in the university school of medicine. The first duty of the university is to shift the emphasis from subject matter to the intellectual processes of the student. That within a university school of medicine there should be conserved and taught the whole subject matter of medicine goes, perhaps, without saying. But that this can all be condensed to fit into a four years' curriculum is manifestly impossible. Further, I submit that the body of knowledge in use by any practitioner is a constantly shifting structure, and that such knowledge as is acquired or can be acquired by the student during his medical course bears only a slight relationship to that which he acquires and puts to use in later life. My ideal university would drop the attempt to establish a fixed curriculum, and would eliminate or bring to a minimum all required courses. It would recognize the fact that the subject matter necessary for the practice of medicine may be acquired in any of a great number of ways, and within certain very wide limits it would allow the student freedom of election of courses in the belief that he will develop both his intellectual powers and his knowledge of medicine more rapidly if allowed to select courses which arouse his curiosity and interest, instead of being forced to learn facts in a predetermined order. In the interest of the public it would naturally safeguard the M.D. degree, which has come to mean fitness for the practice of medicine, but it would design safeguards to operate at the time the degree is to be conferred, rather than to depend on the results of examinations given so long before the degree that they do not longer serve as an indication of the qualifications of the student.

The physician must compare and weigh evidence, and if possible must submit his tentative conclusions to critical tests, and be ready to start anew if the evidence is against

them. These are the methods of science, and either in practice or in research they must be used by the student of medicine. And the obvious way in which a student can acquire the methods of science, by which I mean not the technic of complicated laboratory methods but the intellectual technic of science, is by taking part in scientific investigations. How much better it would be to have him take some part, however small, in new investigations actually in progress. This would give him insight into the methods and intellectual processes involved in arriving at the truth, and would give him first hand contact with the difficulties and pitfalls inherent in the attempt to advance knowledge.

This method of education, which to be successful should be practiced as early and as continuously as possible during the student's progress through his courses in medicine, would also give him one other asset of first importance to him in his later life: a sense of the source and limits of error in the methods of medicine, without which he cannot expect to use these methods fruitfully and intelligently either in practice or in research. The student of medicine cannot become a good physician until his consciousness is fully awakened to the limitations of the methods he is to use in diagnosis, prognosis and treatment, and to the steps necessary for the safeguarding of the accuracy and the validity of his conclusions. It should be possible to teach the methods and the limitations of medicine on the basis of clinical problems—problems which are not new but which are new to the student. This is undoubtedly true, but it is a matter that requires conscious effort on the part of the teachers. If the student, on beginning his study of clinical medicine, finds that his teachers, regardless of how expert they may be in the art of diagnosis, do, when circumstances permit, go through the scientific process requisite for framing rules from the data of the particular cases before them, he will have the beginning of a sound basis for his career in practice. It is therefore extremely important that the student should have his first contacts with clinical work under auspices in which the principles which he has been taught are carried into practice. One of the real weaknesses of medical education has been the carrying on of slipshod methods in dispensaries, and bringing students into their first contact with clinical work in such an atmosphere.

The same principle applies, of course, to the work of the student in the hospital, but fortunately our hospitals have been as a rule much better conducted than our dispensaries. The university's responsibility in this matter, for the dispensaries and hospitals under its control, is clear. The university, like the medical school, cannot go further with the art of the practice of medicine than to introduce the student to clinical work in order to give him what Cole calls "a final polish by a preceptor system correctly applied." That the preceptor system should be correctly applied is of vital importance.

It may appear that the goal in medical education which I have outlined is an impossible one. This is certainly true to the extent that in practice it will never be quite attained either by the university or by the student. The success of the university in securing a teaching staff with the requisite vision, energy and patience will be variable, and as to the students, only a few will be able to reap the maximum benefits; but with the goal clearly before it, the university should be able to move forward with greater certainty and speed. It should produce better equipped physicians and a greater number who have their potential capabilities fully developed and who in turn will hasten the conquest of ignorance and superstition.

Some Aspects of Medical Education and Procedure

DR. CHARLES F. MARTIN, Montreal: It is now fifty years since Billroth of Vienna gave the world his masterly presentation on the first principles in medical education and in the prosecution of a medical career. Scanning once more the pages of his book, I am impressed anew by the comprehensiveness and penetrating insight of his discussions, ranging all the way from the problem of entrance requirements to that of the full-time clinical professorship, and dealing also with the demands for an adequate administration of a medical school. The cause of medical education is seriously handicapped, for while most medical schools concur in the matter of general principles in teaching, few are free from the restrictions of state enactments or from a species of spiritual conceit and chauvinism that block the way to progress in practice. Here in the United States, and in Canada, unhampered by traditions that have often checked or retarded progress in countries of the Old World, are to be found magnificent plants and large groups of well trained men, eager to further progress under competent leadership; and here, too, improved legislation gives evidence of intelligent and far-seeing legislators to further the needs of medical education still more.

What are some of the outstanding difficulties that beset the realization of our ideals? Surely something more than a mere adjustment of our curriculum is essential. In truth, there must be an altered attitude toward the needs and ideals of the medical profession. More especially must there be cooperation on the part of the secondary schools, the universities, the medical faculties, and the profession, and less of an overzealous local patriotism on the part of our state legislators.

Only within recent years have we come to realize that the chief problem of our schools is educational rather than medical, and that many of the difficulties are common to all branches of higher education. With this realization has come the investigation of educational methods and the need of experimental study of our curriculums.

Medical education is primarily concerned with the proper selection of candidates to study medicine, and this in turn involves a consideration of the personality of the individual and the training he has acquired in early years. The general average of secondary schools does not appear to confer that mental training and that zeal for scholarship which makes for the ideal medical student. If, then, we are to look forward to a selection of candidates who will be a credit to our profession, we must have, first and foremost, good secondary schools and a very much better type of instructor. In this country, the boy leaving school to go to a university for two or three years of preprofessional study finds little more of education than should already have been provided for in the secondary schools. He is admitted to most of these colleges of arts with ease, for it is the criterion of hours of previous instruction, irrespective of their quality, which for the most part imposes the restrictions on this easy access to a university.

It was originally intended that these years should be something more than mere secondary school training, something which would enlarge the candidate's views as a prospective professional man, give him a background in literature, classics or languages, and some scientific training in the technic of how to acquire further professional knowledge. But, after all, what really does happen? A careful scrutiny of the credits of many of the candidates entering our medical schools reveals all too frequently that they have entered on a career of professional study with a minimum of training, selecting those subjects which most easily enable them to accumulate credits, in quantity rather than in quality—subjects selected not for the sake of the training per se, but because they are the easiest possible road to admission, and so there need not be surprise at the almost universal complaint that our average medical student lacks the education and mental training to enable him to enter on a satisfactory career. Yet, having once gained admission to the medical schools, he succeeds, after years of mediocrity, in qualifying for a degree, and entering on practice with a background that is wofully deficient.

Over the question as to what should constitute the most satisfactory course of premedical study in a university, the controversy wages from year to year. Shall these premedical years be devoted to scientific subjects or should the classic and other so-called cultural topics be stressed? It would be interesting indeed to discover how much on this continent our ideals in education run synchronously with the abandonment of the classics. That students should enter the practice of medicine deficient in English language and composition, that they should be devoid of any knowledge of the derivation of words, without even an elementary knowledge of modern languages, is to me deplorable beyond expression. The rapid

advance of knowledge has apparently made us lose sight of our direction in education. And in our haste to impart facts, we forget the influences that help to mold the student's character and outlook; we lose sight of the fact that cultural interests on the one hand and professional interests on the other are best revealed in later life by a well balanced personality.

It is obvious that the quality of scientific training imparted to a young man at a medical school determines in a very large measure his intellectual standard in later years; and it is therefore all important that the curriculum should afford him adequate opportunities for development. The time has surely arrived for our disillusionment as to the amount of knowledge a medical student can acquire in a period of four or five years' study. Recent efforts to overcrowd the curriculum have undoubtedly led to superficiality, to inaccuracy, and so to mediocrity. Our students have thus become machine made, welded all into one pattern, and that not of the best.

Every medical school should maintain a sufficiently high standard in the major subjects; so high as to insure for the average student a sound knowledge of the general principles and technic. If unsuccessful, he must fall by the wayside. An overfilled time-table fatigues the student, and only unfits him for those elective or optional hours of study which might otherwise be devoted to independent work, observation and reading. In our attempt to confer a complete education on the average student, we crowd his time with routine laboratory hours, with specialties and details which not only preclude an adequate and intimate practical knowledge of patients, but do not even seem to render him much more scientific.

I cannot but believe, as did ultimately President Eliot of Harvard, that the presentation of many organized elective and optional courses defeats to some extent the aim of undergraduate education; all the more so when an ultimate examination in prospect merely adds to the student's burden. Only by giving the student sufficient latitude of free time in which he may study for himself, either for purposes of review or for advancing his knowledge, is it possible to take care not only of the average student but of the better student as well. After all, it is not so much what a student is taught as what he learns for himself that counts. We would do well, I believe, to emulate the system in Europe, where the student follows courses when and where he pleases, does not belong to any special year, does not move forward with his class in lockstep progression, and where his two main objectives in the undergraduate course are a primary and final clinical examination. Nor need this undergraduate teaching be under the egis of any one university, if, perchance, the zealous student prefers the inspiration of an instructor elsewhere—physiology in one school, chemistry in another.

The relation of the state to the universities, the medical schools and the medical profession has, I believe, a very direct bearing on the progress of medical education on this continent, and yet, notwithstanding its importance, I venture to say that nothing could be more confused, nothing could be more calculated to engender conflict between the universities and the state, and between professional aspirants and state boards.

Of the difficulties that lie in the way of progress in this field perhaps none is more conspicuous than the absence of uniformity in the regulations governing state and medical school procedure. Now, there cannot be any question as to the principle of state control, of governmental protection, on behalf of the community; the right on the part of the state to find out whether or not a candidate has the ability to practice his profession. But three separate interests are here concerned—the state, the medical school and the profession as a whole—and all three are entitled to consideration in the adoption of our laws. To the state should belong the control in broad outlines of educational policy; to the colleges, the right to determine its details; and to the medical profession, the insistence that these laws and policies are fulfilled. There surely cannot be any doubt that if a medical school can be recognized by the state as a proper institution to undertake the responsibility of teaching medical students, it should be allowed to determine a candidate's qualifications to enter that school. Broad general principles as to these requirements may be laid down by the state, but surely detailed specifications as to subjects, hours and credits need not be given. The state should be content to examine the finished product. This official recognition of medical schools on the part of the state is, I think, extremely important. Its importance has been proved in England, and is, I believe, worthy of emulation.

As to the second point at issue, that of medical training and licensure, opinions are not by any means unanimous as to the detailed requirements of a medical curriculum for preparation to practice. With every year now some new complexity arises, some new contributions to our knowledge of the allied sciences as they affect medicine; new subjects are added to the student's list of studies, and so the burden is increased.

Medical education is and must be ever changing if it is to be progressive. Legislation, on the other hand, is fixed and cannot be so easily changed. Despite this danger, state enactments are from time to time created, and laws are fixed—so binding on the prospective practitioner as often to bar his ambitions unduly.

State control is a rational necessity, but it becomes a stumbling block to progress unless it is enlightened and fully appreciative of university standards and educational needs. States may claim the right under such ideal auspices to determine the broad outlines of professional study, the minimum number of years of study (not hours or credits), the general range of subjects and their relative importance in the schools. Most of all, they should determine what schools merit official recognition as proper and fitting to confer medical education. Obviously, the state should decide on the nature of the final examination—the final test as to fitness for practice. This examination should be searching enough and should be governed by competent and approved examiners.

Altering the Medical Curriculum

DR. RAY LYMAN WILBUR, Stanford University, Calif.: This article appears in full in this issue, page 723.

DISCUSSION ON PAPERS OF DRS. MC LEAN, MARTIN AND WILBUR

DR. ARTHUR DEAN BEVAN, Chicago: I think we are doing really wonderful work. We are making very rapid progress. The time has come when the medical school should be recognized as teaching science in all departments, and medicine recognized as one of the great sciences, just as much as geology and chemistry and physiology. I do not think that there is any longer any question about that. I agree perfectly with Dr. Wilbur in his general proposition that in developing a practitioner of medicine we must develop him on broad lines; that in the clinical years the various departments must be at least correlated under the three great departments of medicine, surgery and obstetrics. I feel from my own experience that it is very important to carry the laboratory departments into the clinic. There was a time when I used to criticize the work done by the laboratories in their training of students who came up to my clinical department, but I have learned better now. The fact is that these subjects are such large subjects that the student in the best university acquires simply the beginning of knowledge in these different departments; if the medical man is ever to amount to anything he must realize that at the end of a certain period he has the right to begin to be a physician, and that if he ever amounts to anything as a physician he must learn more in every year after he graduates than in any year of his undergraduate course.

DR. EDWARD L. TUOHY, Duluth, Minn.: For several years I have had contacts in a general hospital with interns who have come from some of our best medical schools. Realizing that they have had a number of years grounding in the basic sciences, notably physics and chemistry and physiology, in contrast to anatomy and pathology, I have categorically asked the men how much of their chemistry and physiology they are bringing over into their professional life. Almost to a man they have answered that they are bringing nothing. If that statement is contrasted with what one culls from the best research journals, it will be noticed that a great deal of research useful to clinicians is developed through the aid

of chemistry notably, and the aid of physics and physiology. Why is the student bringing so little of that with him? If he becomes an investigator and works coordinately with research men such as Dr. McLean, in the matter, he will make use of some of the teaching he has had. It should be remembered that he has spent a good many years in very intensive study, possibly to the exclusion of the classic knowledge or knowledge of the human race that various speakers have considered essential. In any case he will say that the chief reason he has not taken over much of these basic sciences into his professional life is that they have not been interpreted to him by the clinical men who taught him. In contrast, following the lead of the great men who developed pathology, the teachers of pathology have for a long time brought their knowledge as well as their technic directly into the hospitals and directly into the clinical general statement. How, if the advice of Dr. Wilbur to have physiology and chemistry and abstract sciences taught without any particular connection with the medical student is followed, will conditions be notably changed over what they are now? For example, a man who teaches in one of the leading colleges here in Chicago tells me that a physiologist who has given his attention to the development of the nervous system for some time casually asked a medical student, "What is the cause of locomotor ataxia?" Obviously, even a rather indefinite knowledge of medicine would be an enormous advantage to the teachers of clinical physiology and clinical chemistry. What is the advantage of filling these students so full of a lot of hours and a lot of detail in these basic sciences if only a disgust for such subjects is created, and they are rendered, as they seem to come to us at hospitals, certainly fed up, fatigued, tired and annoyed? They are looking for the clinical application of medicine and surgery, and have lost all touch and all contact with what to most of them was a very great ground. I do not have a solution to give. I only know that these premedical branches are invaluable to educators, and they need to bring them into the firing line. The physiologist and the chemist had better come over into the hospital and begin teaching something about physiology and chemistry in the terms the students are going to use afterward.

DR. A. J. CARLSON, Chicago: Methods must not be extolled above the value of the raw material or the student. In most of our universities, physiology and anatomy have been on the university basis. It has been so in Chicago for many years, and I do not see that there has been any suffering because of the position of the physiologist in the university and in the medical school. I cannot conceive of a man, regardless of what his degree is, giving his attention to problems of nervous physiology for years and not being able to tell the medical student who asks him what we know today about the mechanism of locomotor ataxia. If fundamental problems are followed as far as they can be followed, they will lead into both pathology and medicine and surgery. We are coming toward the more and more flexible system, and the longer I teach the less satisfied I am with this minutia of detail, and direction of the student. It enables him to get knowledge, but he is not, on the whole, a better man or better equipped mentally at the end than at the beginning. We should accelerate the trend toward flexibility and freedom. But, after all, the big problem is the raw material, and the character of that raw material—I mean the ethical character which is by and large formed before it comes to us. We have heard arguments against the lecture system and prescribed lecture system. Now Dr. Bevan and Dr. Jackson would add an added compulsory lecture course on medical ethics. I am not a teacher of ethics, but from my years of life and contact with men I am quite convinced that ethics cannot be taught by lectures. It has to be taught by example, through living, and regardless of how perfect angels we would make our students, when they get out into the kind of contact and competition that they are facing the first few years of their practice, it is almost impossible for many of them to retain and to live the ideal they may have acquired in college. If I have had one, I have had dozens of my former students come back to me, or I have met them in various states. I get fairly well acquainted with many of these men, and we talk as man to man. What is the thing they tell me as regards the problem of medical ethics? When they mention that question, it is that the situation is such, the commercialism is such, that they cannot practice and make a living and hold on to the ideals that were so beautifully discussed here this morning by the president.

DR. STEPHEN RUSHMORE, Boston: One element which I have noted in recent scientific discussions but which I have missed in the discussion and in the papers here is that the word relativity has not been used, and the fourth dimension and time element have not been brought to the surface. I think it is the time element that we ought to emphasize. If we consider what the physician is confronted with when he has before him a patient, we may get some light on what the physician should be trained to do. He should have a sympathetic understanding of humanity. The patient should have confidence in him. He should understand that the patient is in trouble or he would not come to the physician.: We should regard education as having at least two aspects, the informational and the disciplinary. The physician should first of all have the information and the discipline of the humanist. If we take into consideration the time at which this should be given, if we wait until the student gets into the medical school, until he is 20, and leave until then this training as a humanist, it cannot be given. The same thing may be said of training as a science. If we wait until the student is in the medical school before we expect him to have the scientific method, to understand something about research, to understand what it means to be confronted with a tangled web of circumstance, to select the pertinent, significant and salient facts from this complicated situation, and to concentrate on what is important, the training cannot be given. Similarly, we cannot teach ethics in the medical school. If the student is not ethical when he reaches the age of 20, nothing can be done in the medical school to make him ethical. All we can do in the medical school is to teach him a little about the way in which the ethics which he already has is to be applied in the practice of medicine. A few lectures on that are advisable. As far as teaching ethics to a person who reaches maturity is concerned, ordinarily it cannot be done. I agree so thoroughly with what has been said about the place anatomy should have in the medical curriculum that I am sorry to hear Dr. Wilbur say it should be put out of the curriculum except so far as it applies to medicine. Anatomy, physiology and biologic chemistry should be put into the university. Medicine should begin with the study of the patient who is sick. The laboratory side, pathology and pharmacology and advanced bacteriology should begin with the study of the patient who is ill and should continue until the end of the student's life.

DR. ALEXANDER PRIMROSE, Toronto: I do not think we can agree with Dr. Tuohy regarding the place that physics, chemistry and biology play in the medical course. I can quite understand that the student coming to the medical clinic would be unable to state what he is bringing over from physics, chemistry or biology, but we cannot overlook the fact that these men have had a training in scientific methods, which is of extreme importance. I am quite sure a good many in this audience can look back on our medical career of a good many years ago and regret the fact that our training in physics, chemistry, biology and so on was not as efficient as it might have been. In the University of Toronto we have a system, which has not yet been mentioned this morning, as to the place which some of these preliminary sciences take in the medical curriculum. In the first place, our medical student who comes to Toronto to take his college matriculation registers in medicine for the six year course. That means he takes his preliminary sciences along with his medical course in the university. That, however, is not the specific point I wish to refer to. We have in the University of Toronto a course for the degree of B.A. in natural sciences, and the course extends over four years. It is so arranged that the student enters for the course of science for his B.A., and by the time the course is completed, he has completed the requirements of the first two years in medicine. In other words, he has anatomy, physiology and bacteriology. It may be of interest to know that for more than twenty years our

students have taken that course voluntarily. They are not required to take it, but they take it voluntarily. Another fact that may be of interest and possibly worthy of study to those who do not know of such an arrangement is that a physiologist and an anatomist are members of the faculty of arts as well as of medicine. The students who are taking their honor course in arts, and are taking anatomy, physiology and bacteriology, are sitting down at the same lecture and are doing the same laboratory work as our students in the first two years of medicine. Thus, there is an intermixture of the two students. Those who proceed to a B.A. degree and honor science do a little more than the medicine student both in anatomy and in physiology, but the two are overlapped. One of the great needs at present is to get away from standardization, from rigidity of curriculum and from the publication of the schedules of instruction. If we can get away from that and develop more individuality, I am quite sure that education of medicine will advance much more rapidly.

DR. LOUIS B. WILSON, Rochester, Minn.: We always indulge in this favorite indoor sport of cussing the curriculum, and it may not be amiss for me to give the experience of an institution which now, since its inception twelve years ago, has not had the curriculum of a medical school. The material consists of a fair representation from all the good medical schools in this country. Students are not required to do anything. What are some of the high lights of our experience in the last twelve years? In the first place, we found we required about one instructor for each two students. Next, it requires a great increase in instructors in three of the fundamental branches, physiology, pathology and biochemistry. We are coming very rapidly now to believe that a great increase is also required in the personnel in the department of anatomy. It requires in these departments very much of an overemphasis as compared with ordinary medical school work of men in research positions, men who are giving their entire energies to investigation in these fields. In pathology, more than personnel is required. Although we have about two postmortems a day, they do not satisfy the demands for postmortem experience on the part of the students. Although each man is told there are lectures, he is not expected to go to any except those he desires. A record is not kept of his attendance and examinations are not given; yet there is an astonishingly high percentage of attendance on lectures. We have found there is a marked trend toward the same kind of work though the men come not only from the good schools in the United States but also from a great many foreign countries. We find that one of our greatest difficulties is to determine the fitness of the individual at the end of his four or five years of work with us. The percentage of men who come through the four years of training and are recommended as fit to receive the stamp of approval of the university is very small compared with the percentage in the good medical schools. This is not due to the fact that we do not select the individuals, because we accept about one man in twenty who apply; approximately one third of all the medical school graduates of America apply. I do not know whether most medical schools would dare face such a mortality as we face. It is possible that a state institution supported by state funds would hear from its legislators if it attempted such a thing.

(To be continued)

Physical Development of Young Workers in Sweden.—All young persons in Sweden between age 13 (boys) or age 14 (girls) and age 18 who are industrially employed are medically examined annually and the findings are entered in individual workbooks. Data have been extracted therefrom for the years 1913-1921 and published in a report. For boys the annual increase in height is at a maximum between ages 14 and 15, in weight and chest measurement between ages 15 and 16. For girls, who develop physically earlier than boys, maximum growth occurs before age 14. The boys are lighter than girls until age 16, and do not equal them in height until age 15, but do not remain below them in chest measurement after age 14.—*International Labor Review* **13**:569, 1926; abstr. *Bull. Hyg.*, December, 1926.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Bills Introduced.—Senate bill 208 relates to the education of persons in tuberculosis sanatoriums. House bill 605 provides for the reporting of contagious diseases.

License Restored Pending Appeal.—The superior court has annulled the action of the state board of medical examiners in revoking the license of Dr. Robert W. Renwick of Los Angeles. The state board, which has appealed, has informed Dr. Renwick that he is restored to full rights of practice and will continue so until such time as the appellate court may reverse the decision of the superior court.

Antievolution Bill-Protest.—The American Association for Medical Progress, Santa Barbara County Branch, has protested against the Heisinger antievolution bill, which proposes to forbid the teaching of evolution as a fact in the primary and secondary schools of California. The American Association for Medical Progress points out that antiscience is already sufficiently rampant in California, as evidenced by the lack of compulsory vaccination and the notorious smallpox record of the state.

DELAWARE

Bill Introduced.—House bill 155 would appropriate $5,000 for diphtheria antitoxin.

IDAHO

Bill Introduced.—House bill 202 would include cannabis in the list of prohibition narcotics.

Personal.—Dr. William S. Titus, Boise, has been appointed full-time chief of surgical service in the U. S. Veterans' Hospital in that city.——The following county health officers have been appointed: Dr. James R. Bean, Wallace, Shoshone County; Dr. James R. Young, Pocatello, Bannock County; Dr. James M. Lyle, Lewiston, Nez Perce County, and Dr. William T. Drysdale, New Plymouth, Payette County.

Pacific Northwest Medical Association.—The next annual meeting of this association will be at Boise, June 27-29. The program announced comprises three addresses by each of the following: Drs. Dean Lewis, Johns Hopkins University Medical School, Baltimore; William R. MacAusland, Boston; Arthur L. Bloomfield, Stanford University School of Medicine, San Francisco; Aldred S. Warthin, University of Michigan Medical School, Ann Arbor; Stuart Pritchard, Battle Creek, Mich.; Frank Hinman, San Francisco; Harold Amoss, Johns Hopkins University Medical School, Baltimore; Herbert M. Evans, University of California Medical School, San Francisco, and Robert D. Mussey, Edward Starr Judd and John deJ. Pemberton, all of the Mayo Clinic, Rochester, Minn.

ILLINOIS

Bill Introduced.—House bill 128 would recognize the practice of chiropractic and provide for the regulation thereof.

Dr. Wiggins Honored.—St. Clair County Medical Society gave a dinner, March 3, in honor of Dr. Jonathan L. Wiggins, East St. Louis, who has completed fifty years in the practice of medicine and many years as a member of the society. Dr. Wiggins' friends from other counties were invited to the dinner. Dr. Harry M. Conner, Mayo Clinic, Rochester, Minn., gave an address on "Differential Diagnosis of Conditions Associated with Splenomegaly."

Society News.—Dr. John Harvey Kellogg, Battle Creek, Mich., will address the St. Clair County Medical Society, East St. Louis, April 7, on "Diet as a Therapeutic Measure in Chronic Disease."——Dr. David C. Straus, Chicago, addressed the Elgin Physicians' Club, February 14, on "Gallbladder Disease as Seen by the Surgeon."——Dr. Elsworth S. Smith, St. Louis, addressed the Adams County Medical Society, Quincy, February 14, on "Prognosis and Treatment of Arterial Hypertension."

Chicago

Liquor Licenses Revoked.—The local prohibition administrator recently revoked the liquor licenses of the following for the reasons indicated:

Dr. Matthew J. Aron, unlawful disposition of liquor; diversion; conspiracy.
Dr. George R. Fithian, inaccurate records; not actively engaged in permit business at address given in permit.
Dr. Adolph Hussong, inaccurate records, diversion, unlawful issuance of prescriptions.

Coincidental Meetings in Forty Years.—Coincident with the meeting of the Council on Medical Education and Hospitals recently at the Palmer House was the annual meeting of the Inland Daily Press Association. Forty years ago on the same date, February 16, the press association and the American Medical Association met at the old Palmer House. Several of the editors, their secretary recalled, were then obliged to seek rooms elsewhere because of the congestion occasioned by the medical meeting.

Society News.—The Chicago Laryngological and Otological Society will meet, March 7, at the Stevens Restaurant, 16 North Wabash Avenue; among others, Dr. Edwin McGinnis will speak on "Nonopaque Foreign Body in the Tracheobronchial Tree, Diagnosis and Bronchoscopic Treatment," and Dr. Harry L. Pollock on "Travel Notes of Otolaryngologic Interest."——Under the auspices of the Illinois Society for Mental Hygiene, the Association for Child Study and Parent Education and the Central Council of Child Education, a one day conference was held at the Palmer House, March 5, on "The Child." Prof. Ernest R. Groves, Boston University, gave an address on "Personality and Social Adjustment," and Edwin A. Kirkpatrick, president, state normal college, Fitchburg, Mass., on "School Training and Parenthood." John B. Watson, LL.D., author of "Behavior," spoke on "Technic and Methods in the Study of Children."——The Society of Medical History of Chicago and the Institute of Medicine will hold a joint meeting, March 18, at the City Club, 8 p. m.; Dr. David J. Davis will speak on "The Quakers in Medicine"; Chauncey D. Leake, Ph.D., Madison, Wis., "Medical Caricature in the United States"; Dr. Richard Dewey, San Francisco, "The Care of the Insane in Illinois," and Dr. Benjamin Barker Beeson, "Jean Martin Charcot: A Summary of His Life and Work."——Dr. Barton Cooke Hirst, Philadelphia, will address the Chicago Gynecological Society, March 18, 8 p. m., on "Ovarian Dysfunction Dependent on Abnormalities of the Ductless Glands," and Dr. Jacob P. Greenhill on "A Human Ovum Approximately Nineteen Days Old."——Dr. Jacob J. Mendelsohn will address the Chicago Tuberculosis Society, March 10, Brevoort Hotel, on "Tuberculosis Among Mexicans in Chicago"; Dr. Robert S. Berghoff, "Recent Impressions of the Tuberculosis Situation in Europe," and Dr. Edwin P. Sloan, Bloomington, on "Tuberculosis and Goiter."

INDIANA

Bill Introduced.—Senate bill 107 would authorize the establishment of a psychiatric hospital for the treatment of nervous and mental diseases.

Northern Tri-State Medical Association.—The fifty-fourth annual meeting of the Northern Tri-State Medical Association will be at the Spalding Hotel, Michigan City, April 12, under the presidency of Dr. Harvey H. Martin, LaPorte; there will be clinics arranged by the LaPorte County Medical Society, and conducted by Drs. Joseph H. Andries, professor of surgery, Detroit College of Medicine and Surgery; Charles P. Emerson, dean and professor of medicine, Indiana School of Medicine, Indianapolis; Charles L. Mix, professor and head of the department of medicine, Loyola University School of Medicine, Chicago; Charles A. Elliott, professor of medicine, Northwestern University Medical School, Chicago; Kellogg Speed, associate professor of surgery, Rush Medical College, Chicago; John H. J. Upham, professor of medicine, Ohio State University College of Medicine, Columbus; Preston M. Hickey, professor of roentgenology, University of Michigan School of Medicine, Ann Arbor, and Frank Smithies, professor of medicine, University of Illinois, Chicago. The addresses and clinics cover a wide range of subjects and they will be open for general discussion. There will be a morning session at the clinic hospital, and an afternoon and evening session at the hotel.

KANSAS

Bills Introduced.—House bill 454 would establish a state board of examiners in the basic medical sciences. House bill 475 defines public hospitals and regulates the admission of physicians and surgeons thereto.

MASSACHUSETTS

Fund to Help Worthy Students.—Friends and relatives of the late Dr. Henry Ehrlich of Boston have turned over to the dean of Harvard University Medical School, it is reported, a gift of $11,450 to be known as the Henry Ehrlich Memorial Fund, the income of which is to be used to assist needy and worthy medical students.

Investigation of Endocrine Factors in Nervous Conditions.—Through the agency of Mrs. Stanley McCormick, a fund has been established to support an investigation of the relation of endocrine factors to nervous functions. Dr. Roy G. Hoskins, chairman of the Section on Pathology and Physiology of the American Medical Association, will direct the work in association with Milton O. Lee of the Medical School of Harvard University, Boston, and nearby psychiatric institutions.

University News.—Dr. Edgar L. Collis, professor of preventive medicine, Welsh National School of Medicine, Cardiff, Wales, is delivering a series of lectures during February on "Industrial Hygiene and Toxicology" at the Harvard University Public Health School.——Dr. George C. Caner has been appointed assistant in neurology at Harvard Medical School, Boston, for one year from Sept. 1, 1926; Dr. John G. Kuhns, teaching fellow in orthopedic surgery; Dr. Paul R. Donovan, teaching fellow in hygiene; Dr. Marion F. Eades, teaching fellow in obstetrics, and Dr. Robert N. Ganz, assistant in pediatrics.

MICHIGAN

Society News.—Dr. Edgar Mayer, Saranac Lake, N. Y., lectured at the Henry Ford Hospital, Detroit, January 19, on "Application of Light to Disease and the Basic Principles of Treatment," and at the North End Clinic, Detroit, February 20, on "Early Diagnosis of Pulmonary Tuberculosis."

New Medical Building at Detroit.—The Detroit College of Medicine and Surgery, Detroit, has about completed a new six-story building, which will be the first of a three unit plant intended to replace the old structure. The new building, which cost about $500,000, houses the laboratories and lecture rooms of physiology, biologic chemistry and operative surgery, the library, an auditorium and animal houses. There has also been erected a central heating plant to serve the medical school and the municipal hospital, which is the clinical teaching plant of the school.

MINNESOTA

Bill Introduced.—Senate bill 439 provides for the licensing of dental hygienists, and establishes their duties and rights.

Dr. Burch Appointed Head of Department.—Dr. Frank E. Burch, St. Paul, has been appointed head of the eye, ear, nose and throat department, University of Minnesota School of Medicine, to succeed the late Dr. William R. Murray. The appointment is on a part-time basis. Dr. Burch will continue his private practice and his work at the Miller Hospital, St. Paul.

Personal.—Dr. Charles E. Reddick of the Mayo Clinic has been granted a leave of absence to accept a position as ship surgeon of the S. S. *President Jefferson*, whose home port is Seattle.——Dr. Kano Ikeda, Minneapolis, has been appointed director of laboratories at St. Luke's Hospital, St. Paul.——Dr. Theodore A. Estrem has been appointed health officer of Hibbing to succeed Dr. George N. Butchart.——Dr. George A. Geist, St. Paul, has been elected chief of staff of the Ancker Hospital.——Robert W. Archibald, D.V.M., aged 37, of the state department of health, died, February 14, of injuries received in an automobile accident.

MISSOURI

Bill Introduced.—Senate bill 335 provides for the consolidation of city and county hospitals, and for the support of such joint hospitals.

Annual Military Night.—The plan introduced by the president of the St. Louis Medical Society last year to have a military meeting was carried out again this year, February 22, and is now considered one of the annual society affairs. On the recent program was Col. Moor N. Falls, commanding

officer, sixth infantry, Jefferson Barracks, whose subject was "An Appreciation of Our Military Medical Men"; Lieut. Col. Ernest G. Bingham, medical corps, Jefferson Barracks, spoke on "Reminiscences"; Dr. Robert Mueller, "Advancing with the Marines in France"; Dr. Walter E. Hennerich, "Naval Service During the War." Members were requested to wear a uniform when possible and to bring other members of their families. There was dancing, the sixth infantry band providing the music.

NEBRASKA

Bills Introduced.—Senate bill 273 would prohibit the furnishing for beverage purposes of wood alcohol, compounds or preparations containing wood alcohol, or any poisonous liquor which causes death from its use as a beverage. House bill 609 provides that counties from which patients are admitted to the hospital for the tuberculous shall pay the necessary expenses for clothing and burial when these are not borne by relatives or friends of the patient. House bill 285 would provide that wholesale druggists may sell malt, vinous or spirituous intoxicating liquors to registered pharmacists for resale on prescriptions of licensed physicians.

NEW JERSEY

Bills Introduced.—House C. R. 5 memorializes congress to establish one of the proposed rehabilitation hospitals at Camp Dix in Burlington County. House bill 356 authorizes the county physician to perform a postmortem examination to determine the cause of death, and to make unnecessary a coroner's inquest when the physician reports that death was from a natural cause. House bill 408 would include in the exceptions to the medical practice act licensed chiropractors and other drugless practitioners as licensed under the limited license act.

NEW YORK

Licenses Revoked.—The secretary of the state board of medical examiners reports that the medical licenses of Drs. John Marble Allen and Leonard K. Hirshberg were revoked, Oct. 29, 1926, because they had been convicted of a felony.

Personal.—Dr. Edward H. Codding has completed twenty-five years of service as health officer of the city of New Rochelle.——Dr. Frederick W. Parsons has been appointed head of the new state department of mental hygiene. Dr. Parsons has been in the state hospital service since 1902, and since July 1, 1926, has been chairman of the state hospital commission.

Health at Albany.—Reports to the U. S. Department of Commerce from sixty-seven cities with a total population of about 30 million, for the week ending February 12, indicate that the highest mortality rate (20.4) was for Albany, and that the rate for the group of cities as a whole was 13.3. The mortality rate for Albany for the corresponding week last year was 22.8, and for the group of cities, 14.5.

Bills Introduced.—House bill 1113 provides for the ascertaining of whether or not persons committed to jail are suffering from contagious or incurable diseases. House bill 1198 would provide that a physician or surgeon employed by the state department shall not solicit or treat any claimant under the workmen's compensation law. House bill 621 would prohibit cosmetics which contain any ingredients injurious to health, and would regulate the labeling of all cosmetics.

Eighteen Presentations in Ninety Minutes.—The Associated Physicians of Long Island conducted a scientific program at the Methodist Episcopal Hospital, Brooklyn, January 29, in which eighteen papers were presented in ninety minutes. The speakers, members of the staff of the hospital, were required to write their papers within a limit of 600 words and to present them within five minutes. The program was carried out as planned in the presence of more than 100 physicians. The timekeeper arranged an alarm to go off at the end of five minutes, but it remained silent, as every speaker completed his remarks ahead of time. The program was considered a demonstration of accurate preparation. Among the subjects were "The Use of the Bronchoscope"; "Blood Transfusion"; "Manikin Demonstration; Delivery of a Face"; "Electrocardiograms"; "Kahn Precipitation Test for Syphilis," and "Subacute and Chronic Sinusitis in Children."

Conference on Public Health Work.—Representatives of boards of supervisors of about thirty counties, the state health department, state medical society, State Charities Aid Association, the state grange and other private agencies met at the executive mansion at the request of Governor Smith for a conference on public work, February 24. Governor Smith urged that the county be made the basis of public health administration. He said that the results obtained in Cattaraugus County should point the way for other counties to take advantage of the law passed in 1923 under which the state reimburses the county for half of its health work. Cattaraugus is the only county in the state whose public health work is organized on a county basis. Other speakers at the conference included the state commissioner of health, Dr. Matthias Nicoll, Jr.; Dr. George M. Fisher, president of the state medical society, and Dr. Stanton P. Hull, president of the sanitary officers' association of the state. Resolutions were adopted to the effect that (1) modern public health work can accomplish as much in villages and rural areas in preventing sickness and premature deaths as it has in cities, but only if organized by larger units than towns and villages; (2) each county should consider carefully the establishment of a county health unit under the existing permissive law; (3) each board of supervisors should appoint a special committee to study the improvement of health in the county; to visit and examine the operation of the Cattaraugus County board of health, and to recommend to the supervisors such action as, in its opinion, should be taken to increase the effectiveness of public health work in the county by the establishment of a larger operating health unit.

New York City

Liquor Licenses Revoked.—The local district prohibition administrator has revoked the liquor licenses of the following for the reasons indicated:

Dr. Giovanni Delle Donne, irregular prescriptions.
Dr. Emilio L. Hergert, irregular prescriptions.

Fifth Harvey Lecture.—Dr. Edgar Leigh Collis, Cardiff, Wales, will deliver the fifth Harvey lecture at the New York Academy of Medicine, March 19, at 8:30, on "Phthisis and Industrialism—Silicosis."

Dr. Lincoln Leonard Landis' License Revoked.—The state board of regents revoked the license of Dr. Lincoln Leonard Landis, proprietor of the House of Health, February 24, on the unanimous recommendation of the state board of medical examiners, it is reported. The charges were made by deputy commissioner of education, Augustus S. Downing, and are said to have alleged eight specific cases of fraud and deceit in the practice of medicine; also that Dr. Landis had been convicted of misdemeanors.

Forty Warrants for Illegal Practitioners.—A special detail of policemen started out, February 18, to serve forty warrants in a drive against persons who violate the new medical practice law. The warrants were issued by Chief Magistrate McAdoo, following an investigation of several weeks in which the district attorney and the police and health departments cooperated. Four persons were arraigned during the first day of the drive. They were, according to the New York *Times*, Lillian O. Kern, a chiropractor; Claude Harper, a physical culture instructor; Francisco S. Sauchelli, a chiropractor, and Margaret Gast, a masseuse. Four chiropractors are said to have been brought into court the following day on a charge of using the title "doctor" illegally; these were Mrs. Natalie Eaton, Joseph Miller, John Connerton and Alphonse Feller.

Personal.—Dr. Wendell C. Phillips, President of the American Medical Association, was guest of honor at the annual dinner of the St. Lawrence County Society, Hotel Commodore, February 10.——Mr. Homer Folks, secretary, State Charities Aid Association, has been elected associate fellow of the New York Academy of Medicine; Mr. Folks has also been reappointed by the governor for a six year term as a member of the public health council.——A testimonial dinner was given Dr. Isidore R. Lowenthal, February 13, by the Turker Benevolent Association, in recognition of his twenty-five years of service in welfare work.——A testimonial dinner will be given Drs. Henry J. Wolf, Gustav Seeligmann and Abraham P. Zemansky, March 15, at the Waldorf-Astoria, by their colleagues at the Lebanon Hospital and by its board of directors in honor of their long years of service to that institution and their retirement to the consulting staff.——Col. Albert E. Truby, Medical Corps, U. S. Army, has been detailed corps area surgeon, with headquarters at Governors Island, to succeed Col. Frank R. Keefer, who has become Assistant Surgeon General.——Dr. Simon Flexner, director, Rockefeller Institute for Medical Research, has been elected a member of the German Academy of Natural Sciences in Halle.

NORTH CAROLINA

Bill Introduced.—Senate bill 527 would provide for the treatment of indigent tuberculous patients.

Bills Killed.—The house bill intended to regulate and license the practice of naturopathy was defeated by a vote of 91 to 16 last week.——The bill forbidding the teaching of evolution in any state supported school was again defeated by a majority even larger than that when it was formerly before the legislature.

OHIO

Bills Introduced.—Senate bill 201 provides for the sterilization of defectives on discharge from state institutions. House bill 342 provides for the appointment of a psychopathic probation officer for borderline cases of insanity.

University News.—Western Reserve University, Cleveland, announces the award of two Ohio chemical fellowships made possible by a grant of the Ohio Chemical and Manufacturing Company, Cleveland, to James M. Carter, Pasadena, Calif., and Mrs. Madeline Bixby Campbell, Cleveland, who will devote full time to research on "anesthetic gases" under the direction of Harold S. Booth, Ph.D., professor of chemistry.

Dr. Dieterich Appointed Director of Laboratories.——Dr. Frederick H. Dieterich, New York, has been appointed director of laboratories at the Good Samaritan Hospital, Cincinnati, and will take up his duties there, March 1. Dr. Dieterich was formerly on duty at the Peking Union Medical College, Peking, China; an instructor in pathology, Columbia University College of Physicians and Surgeons, New York; director of pathology at Creighton University Medical School, Omaha, and later served at the Rockefeller Institute, New York, and at the Medical College of the State of South Carolina, Charleston.

Society News.—Dr. Thomas A. Copeland, Athens, has been reelected secretary of the Athens County Medical Society; Dr. Copeland has been the secretary for twenty years.——Dr. Amos R. Kent, Springfield, addressed the Clark County Medical Society, recently, on "Effects of Disease on Certain Characters of History."—The Montgomery County Medical Society held a special meeting at Dayton to consider the policy of employing a full-time executive secretary, and to consider amendments to the constitution increasing the annual dues.——About twenty-four physicians of Lima and Allen county left by special car, February 5, on a tour of clinics in Baltimore, Philadelphia and New York.

OKLAHOMA

Bill Introduced.—House bill 306 provides for the levy of a one mill tax on an ad valorem basis for public health purposes.

Clinics for Crippled Children.—The Oklahoma Society for Crippled Children held a two days' clinic in February at Muskogee, which was conducted by Drs. Wade H. Sisler, Tulsa, and William P. Fite, Muskogee, with the assistance of many other local physicians and nurses.——Drs. Andrew G. Cowles, Ardmore, and Earl D. McBride, Oklahoma City, recently held a clinic for crippled children under the auspices of the Ardmore Rotary Club.

PENNSYLVANIA

Bill Introduced.—House bill 927 provides for the prevention and treatment of mental diseases, and regulates the admission of mentally diseased patients to institutions for mental defectives.

Personal.—Dr. Walter F. Mylin, Lancaster, has resigned as physician-in-charge of the Lancaster County Hospital and Insane Asylum, effective, January 1.——Dr. John K. Smith has been elected president of the board of health of Charleroi.

Society News.—Dr. Clarence W. Frey, retiring president of the York County Medical Society, addressed the annual meeting at York, January 6, on "Professional Courtesy." The new president is Dr. Elmer S. Stambaugh; Dr. Louis V. Hamman, Baltimore, addressed the meeting on "Diagnostic Procedures."——The entire board of health of Boyertown, the president of which was Dr. Irving O. Mahr, resigned, February 7, it is reported.——Dr. Theodore Diller, Pittsburgh, addressed the New York Academy of Medicine, February 24, on "Pioneer Medicine in Western Pennsylvania," and Dr. Harry N. Malone, Pittsburgh, on "The Life of Albert G. Walter," illustrated with a number of colored drawings and case histories.——The Women's Auxiliary of the Allegheny County Medical Society has placed subscriptions of *Hygeia* in the sixteen public high schools of Pittsburgh, and now aim to place *Hygeia* in the parochial high schools and all the high schools of Allegheny County.——Dr. E. F. Mueller, Hamburg, Germany, addressed the Northampton County Medical Society, Bethlehem, February 18, on "Nonspecific Protein Therapy"; Dr. Mueller is now doing research work at Columbia University, New York.——Dr. George Walker, Baltimore, addressed the Harrisburg Academy of Medicine, February 15, on "The Prevalence of Venereal Diseases and the Prevention by Medicinal Agents"; Dr. Jonathan M. Wainwright, Scranton, will address the academy, March 15, on "Lantern Demonstration on Some Principles in Breast Cancer."——The annual meeting and election of officers of the Allegheny County Medical Society, Pittsburgh, will be held at the Schenley Hotel, April 12.

Philadelphia

Hospital News.—One hundred women of Gimbel Brothers' statistical department have given a children's library with cases for the books to the children's ward of the Howard Hospital, Broad and Catharine streets; the gift was formally accepted by officials of the hospital, February 16.

Personal.—Robert J. Formad, formerly instructor in histology, University of Pennsylvania, is now working as a specialist in rabies in the bureau of animal industry, department of agriculture, Washington, D. C.——Dr. Jesse O. Arnold has been appointed professor of obstetrics at Temple University School of Medicine to succeed the late Dr. John C. Applegate.——Dr. and Mrs. Louis von Cotzhausen celebrated their golden wedding anniversary, February 14.

Regional Tuberculosis Institute.—Under the auspices of the National Tuberculosis Association and the tuberculosis associations of Pennsylvania, New Jersey, Maryland and the city of Washington, a regional institute for tuberculosis workers will be held in Philadelphia, March 14-26, at the Pennsylvania School of Social and Health Work. The studies will cover (1) methods of antituberculosis work; (2) programs of antituberculosis work, and (3) relationships with other health movements. The speakers will include, among others, Philip P. Jacobs, Ph.D., and Drs. Henry R. M. Landis, Elmer H. Funk, William P. Brown, Eugene L. Opie and Charles J. Hatfield.

RHODE ISLAND

Bill Introduced.—Senate bill 94 would create a state board of chiropractic examiners, and would regulate the practice of chiropractic.

Society News.—Drs. Burton E. Hamilton and Paul D. White, Boston, addressed the Providence Medical Society, Providence, February 7, on "Heart Disease and Pregnancy" and "Observations on the Clinical Value of Electrocardiography," respectively, and Dr. Frank T. Fulton, Providence, on "The Rheumatic Heart."——Dr. Charles H. Jameson, Providence, addressed the Pawtucket Medical Association, Pawtucket, recently, on "Presenting Symptoms in Urology."

SOUTH DAKOTA

Personal.—Dr. Robert F. Campbell, Watertown, has been elected vice president of the Chicago and Northwestern Railway Surgeons.

Bill Introduced.—House bill 143 provides that the employer shall provide necessary first aid and medical services under the workmen's compensation act.

Society News.—Dr. Percy D. Peabody, Webster, addressed the Thirteenth District Medical Society, Milbank, January 18, on "Retrodisplacement of the Uterus," and Dr. Frank N. Cliff, Milbank, on "Typhoid"; Dr. Elwin O. Church, Revillo, was elected president for 1927.

WASHINGTON

Bill Introduced.—House C. R. 8 would establish a commission to construe the enactment of uniform laws governing and regulating the handling of narcotic drugs and the treatment of drug addiction.

Personal.—Dr. Francis W. Anderson has taken up the duties of mayor of South Bend.——Dr. Elmer E. Langly, Spokane, has been appointed by the U. S. Department of Commerce medical examiner of aviators in the Spokane district.——Dr. Torleif Torland has been elected president of the Seattle Obstetrical and Gynecological Society for 1927.

Society News.—Dr. Jay I. Durand, Seattle, addressed the Spokane County Medical Society, Spokane, February 10, on "Injection of Blood as a Therapeutic Measure in Diseases of Children," and Dr. A. L. Hart, Spokane, on "Research in the Histology and Pathology of Tuberculous Infections."——Dr. Edward H. Maxey, Aberdeen, has been elected president of the Grays Harbor County Medical Society for 1927; Dr. Charles E. Sears, Portland, addressed the society, January 21, on "Iodine in the Treatment of Goiter."——The King County Medical Society, Seattle, will hold its annual president's dinner, March 5, at the New Washington, at $2.50 a plate. This is the annual get-together of the society; music will be furnished by its orchestra and chorus, and there will be other features equally diverting. Dr. Edward A. Rich, Tacoma, will address the society, March 7, on "Common Bony Pathology Producing Symptoms in the Lower Back."

WEST VIRGINIA

Tri-State Medical Society.—The Central Tri-State Medical Society, including parts of West Virginia, Kentucky and Ohio, will hold its second annual meeting at the Hotel Pritchard, Huntington, April 28. To date, Dr. Charles G. Heyd, New York, and Drs. Thomas R. Brown and Walter E. Dandy, both of Johns Hopkins University, Baltimore, have accepted places on the program. There will be a banquet preceding the evening session to which the physicians and their families are also invited. The attendance at the last meeting was more than 500.

WISCONSIN

Liquor License Revoked.—The district prohibition administrator with headquarters in St. Paul has revoked the liquor license of the following for the reason indicated:

Dr. Martin J. Treichler, Black Earth; illegal disposition of his prescription blanks.

Society News.—The Milwaukee Academy of Medicine is considering a plan arranging for postgraduate instruction this summer, whereby clinics in various branches will be held by members of the staffs of the different hospitals, and physicians of the state will be invited to attend without charge; a committee has addressed the various staffs to learn their attitude toward the plan, what clinics they may be able to give, and the hours and names of those who will teach.——Dr. Louis M. Warfield, Milwaukee, addressed the Kenosha County Medical Society, January 21, on "Thrombosis of the Coronary Arteries," and the Racine County Medical Society, recently, on "Cardiorenal Diseases."——Dr. Stanley J. Seeger, Milwaukee, addressed the Marinette-Florence County Medical Society, January 20, Marinette, on "Appendicitis in Infancy and Childhood."——Dr. Victor Marshall addressed the Outagamie County Medical Society, Appleton, January 20, "Loose Bodies of the Knee Joint and Their Surgical Removal."——Dr. James B. Vedder addressed the Ninth Councilor District Medical Society, Marshfield, January 14, on "Use of the Kielland Obstetric Forceps; Demonstration on the Manikin"; Dr. Edward L. Miloslavich, Milwaukee, "Importance of Postmortem Examinations for the Practitioner"; Dr. Daniel N. Eisendrath, Chicago, "Diagnosis and Treatment of Bladder Tumors," and Dr. Roy P. Potter, "Exhibit of Roentgenologic Films."——Dr. James Dinsdale, Soldiers Grove, who, for several years, has been unable to practice on account of ill health, was recently elected a member emeritus of the Crawford County Medical Society as a reward for his honorable work.——The council of the state medical society of Wisconsin at its January meeting decided that the secretary of the state society would attend the legislative session to be of service to members of the legislature, and through them to the people of the state.

GENERAL

Safeguard Against Foot and Mouth Disease.—The U. S. Department of Agriculture has amended its regulations to guard against the possible introduction of foot and mouth disease from Mexico. The amendment provides that no hides, skins or other animal by-products originating in or unloaded in the southern part of Mexico, where the disease is suspected to exist, shall be admitted into the United States unless disinfected under the supervision of an inspector of the bureau of animal industry; also that no susceptible animals, hay, straw, or other feeding material from that part of Mexico shall be admitted into the United States. The amendment is expected to strengthen the rigid quarantine measures already in force.

The Lister Centennial April Fifth.—The Lister Memorial Committee of the Canadian Medical Association aims to establish the fifth of April as Lister Day in medical schools, hospitals and health centers throughout the world. The committee suggests that special notice be taken of Lister's work on the hundredth anniversary of his birth; that hospitals decorate the wards in some suitable way and arrange a lecture on Lister for convalescent patients; that physicians cooperate with public health authorities to set aside Lister Day for special appeals in aid of hospitals and of such measures as the antituberculosis movement, the cancer campaign and sanitation in general. Lord Lister was born April 5, 1827. The British Medical Association has arranged to celebrate the centenary at its annual meeting in Edinburgh. The Listerian oration will be given in Toronto, Canada, before the Canadian Medical Association; Sir Hector C. Cameron, Lister's oldest living house surgeon, will deliver an oration in Glasgow, April 5; Sir Watson Cheyne will address the Lister Society at Kings College Hospital, London, England. Johns Hopkins Hospital, Baltimore, has made arrangements to celebrate Lister's birthday.

Hearing on Bill to Coordinate Public Health Activities.—The committee on interstate and foreign commerce of the House of Representatives held a hearing, February 24-25, on house bill 10125 for the coordination of the public health activities of the government. This bill would give the President authority to transfer to the U. S. Public Health Service all or any part of an executive agency engaged in carrying on a public health activity (other than any agency of the war or navy departments or the Veterans' Bureau). It would authorize the detail of public health officers to other branches of the government and additional divisions in the hygienic laboratory to study health problems; it would provide a new method of appointments of sanitary engineers, dental officers and scientists of the public health service, create a nurse corps, and expand the advisory board of the hygienic laboratory from a membership of eight into a "National Advisory Health Council" of thirteen members.

At the hearing, Dr. Hugh S. Cumming outlined the purposes of the bill and made a statement showing the medical activities of the government. Drs. William H. Welch, Johns Hopkins University, Baltimore; Herman N. Bundesen, health commissioner of Chicago, and Donald B. Armstrong of the Metropolitan Life Insurance Company spoke in favor of the bill. Dr. Samuel W. Welch, state health officer, Montgomery, Ala., stated that the bill is approved by the National Tuberculosis Association, the National Academy of Medicine, the International Health Board, the American Public Health Association and the Association of State Health Officers. Dr. William C. Woodward, representing the American Medical Association, presented to the committee the resolution adopted by the House of Delegates of the Association in April, 1926, as follows:

Resolved, That the House of Delegates of the American Medical Association endorse the principles embodied in H. R. 10125, a bill to provide for the coordination of the public health activities of the government and for other purposes.

Dr. Woodward stressed the fact that the association stood for coordination of the activities of the federal government in the health field, and for improving facilities in the way of buildings and equipment. He called particular attention to the first section of the bill which represents the gist of the subject. He said "you cannot separate health administration of one kind from health administration of another kind, and get the best results. There should be a coordinating head and the logical coordinating head is the Surgeon General of the U. S. Public Health Service." James A. Tobey, New York, representing the American Public Health Association, pointed out that there are forty different bureaus, divisions or agencies of the federal government which are interested in public health; and that there are manifest reasons why these agents should be brought together. Others who spoke in support of the bill were Drs. Francis D. Patterson, Philadelphia; George W. Fuller, representing the American Public Health Association and American Society of Civil Engineers; S. M. Heulings, Yardmore, Penn.; Dr. Arthur M. Stimson, Assistant Surgeon General, U. S. Public Health Service, and Dr. Milton J. Rosenau, Medical School of Harvard University, Boston. Dr. William C. Fowler, health officer for the District of Columbia, urged that provision be made in the bill placing the public health department of the District of Columbia in the same class with the Army and Navy and Veterans' Bureau, in order that the District of Columbia health activities should not be under the control of the U. S. Public Health Service.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 12, 1927.

The Inflenza Epidemic

Influenza is epidemic in this country, as in Europe generally. According to the ministry of health, 326 deaths from influenza occurred during the week ending January 15 in London and 105 large cities of England and Wales. Of these deaths, 137 were in London and ninety-six were in the outer ring of London. The corresponding figures for the previous week were 172 deaths in London and the large cities, of which seventy-two took place in London and twenty-five in outer London. But the minister of health is advised that neither the incidence of, nor the mortality from, influenza in this country is at present such as to cause serious anxiety. Owing to the prevalence of epidemic disease in London, it has been decided to impose restrictions on visitors to public institutions. Thus, at Guy's Hospital on visiting days, each of the 600 patients is normally allowed to receive at one time three visitors, and as some of these stay only for a short period, it means in practice that a single patient may be visited by as many as ten or twelve relatives and friends in an afternoon. Each patient will now be given two cards of admission and will be able to receive only the visitors to whom these cards are sent. A similar precaution has been adopted in the past, and its reintroduction does not imply that any serious situation has arisen. There will not be any alteration of the regulations with regard to visiting in cases of emergency, when any authorized persons may see a patient. The New Health Society points out in its propaganda that the public can themselves check the disease if they will follow the rules of health advocated by Arbuthnot Lane in his articles. It is essential to keep fit by eating suitable foods and to take precautions as soon as the first symptom of a sore throat appears. A gargle of common salt with a dash of potassium permanganate, taken at night, may, we are told, prevent an attack from materializing. People should stay in the open air as much as possible and keep windows open, especially in bedrooms. Offices should also be kept well ventilated, as closed windows encourage disease.

The Spahlinger Controversy

The boosting of Spahlinger in the lay press (described in a previous letter) has been followed by some criticism. A special correspondent, sent by the *Daily Express* to Geneva to investigate, has interviewed Spahlinger, his patients, physicians and others on the spot. He appears to have carefully sifted rumor from facts and has come to the conclusion that more patients or funds should not be sent for the Spahlinger Institute. As the institute is receiving a large income from patients, Spahlinger's complaint that he is hampered by lack of funds is unfounded. There are two major personalities in the institute, Spahlinger and an English architect, Mr. R. G. Lovell, who invested considerable sums to help the work and has taken part in the business side. He is responsible for the press campaign, and has written a book to show that tuberculosis exists only because Spahlinger's treatment has not been adopted. Yet from several sources cases are recorded, some fatal, in which the treatment failed to benefit the patient. Of these nothing is said in the roaring propaganda. Dr. Graham Little, a dermatologist and a member of parliament, has written to the press stating that it is difficult to understand Spahlinger's secrecy and urging that the public withhold subscriptions pending full revelation. To this Spahlinger has replied: "If my achievements are to be so easily discredited I should be glad to burn my secrets, go back to the bar, and lead for the first time in fifteen years a life owning an ordinary man's share of sunshine." But why this secrecy to the end? If Spahlinger were actuated by the humanitarian motives of which we hear so much, we should have thought that if compelled to abdandon his work for something more pleasant he would have given others the opportunity to carry it on and not deprive mankind of such a boon. His methods of controversy are not edifying. In reply to Dr. Nelson's straightforward account in the *Lancet* of cases treated with his remedies, he attempts, in a manner familiar in the law courts but foreign to science, to discredit his adversary by a personal attack, imputing deliberate errors. He tries to make capital out of the fact that his remedy is wrongly described as "serum" instead of "ferment and antigens." In view of his secrecy, it would not be remarkable if the wrong word was used. In any case it was the remedy he was claiming to cure; so the question of name is beside the point.

Physicians' Fees for Rich Patients

In the Belfast courts, Lord Chief Justice Lane refused to allow the claim of $5 a visit from a wealthy patient and allowed only $4. He declared that a physician or a lawyer is not entitled to charge a wealthy man more than a poor man. But in this country the practice of discriminating between the rich and the poor in the matter of fees is universal. The newspapers have collected opinions on the point, some of which are as follows:

Sir John Bland-Sutton says: "It is the general practice of the profession to gage fees according to the patient's capacity to pay." Dr. E. Graham Little: "It is customary to make a reduction to the nominal consulting fee to poor people, but it is not usual to charge rich men excessive fees. Dr. Cox, medical secretary of the British Medical Association: "The custom of charging a wealthy patient more than a poor patient is, in my opinion, an advantage to the public. A flat rate of charges would be impossible." Dr. Welply, secretary of the Medical Practitioners Union: "I should be sorry for the poor if the present system did not continue."

The Control of Cancer

Sir Berkeley Moynihan delivered the first popular lecture at the new home of the British Medical Association. He said that in 1850 the deaths from cancer were recorded as about 300 per million of population. In 1900, that figure had risen to 800, and in 1925 it had gone up to 1,336, so that in the short space of less than two generations the death rate from cancer appeared to have increased fivefold. These figures were perhaps even more remarkable when they were contrasted with other diseases. The death rate from tuberculosis forty years ago was four or five times that from cancer. Six years ago the two had drawn level, and today the cancer death rate was about one third greater than the death rate from tuberculosis. In the last twenty years the general death rate had fallen 32 per cent; the infant death rate had fallen 45 per cent; the tuberculosis death rate had fallen 38 per cent, and the cancer death rate had increased 20 per cent. The best chance of reducing the mortality from cancer lay in encouragement of research by skilled investigators, and in the education of the public. Sir Berkeley Moynihan did not think there was any hereditary predisposition to cancer. The fact that one person in seven over the age of 30 died from cancer must be remembered in this connection. Cancer was not caused by any special food or foods, or by any absence of special foods. It was true that excessive indulgence in food when little exercise was taken would steadily and insidiously depreciate the general health, and that in such

circumstances of lessened resistance a person might more easily fall a victim to cancer, as to other diseases. He went on to explain the great need of popular knowledge of the disease and of early diagnosis and treatment. If a person had lumps, fissures or cracks that would not heal, or tumors, that person should consult a physician. One could not afford to neglect any lump on the body. On the question of diet, Professor Mellanby had been asked to start afresh and make a new inquiry on this subject.

Distemper Research

The establishment of a fund for the investigation of distemper of dogs by the *Field* (a journal devoted to country life) was announced some time ago in THE JOURNAL. An important advance is now announced by the council of the fund. The research was handicapped by the absence of known means of cultivating the virus of the disease outside the animal body. Test tube cultures of the organism would provide a source of more abundant and more satisfactory material and would permit the accurate measurement of dosage. So far, however, the investigators have had to use crude preparations, of unknown and inconstant potency, prepared from the spleens of infected ferrets. A crude vaccine prepared in this way has, nevertheless, proved efficient in protecting ferrets, which are subsequently able to withstand inoculation with massive doses of living virus without showing any symptoms. Success has been obtained in more than 70 per cent of the experiments, and the failures are probably attributable to the inherent uncertainty of the present crude method.

The employment of this vaccine alone has proved to be less efficacious in protecting dogs. There is, however, reason to believe that the inoculation of dogs with killed virus from ferret spleens does increase their resistance in some extent, if only temporarily, so that subsequent inoculation with living virus produces only a mild and modified form of the disease, which in its turn should produce lasting immunity. While the progress made in the investigations is encouraging, the work is still in a purely experimental stage, and there is not yet a method of immunization suitable for trial in ordinary practice. The material necessary for vaccination is difficult to prepare, and is necessarily limited in amount. It is crude and unstable, and its strength and quality are liable to great variation—as between one preparation and another.

Fatal Accident with Junker's Inhaler

An inquest was held on a boy, aged 16, an apprentice artificer in the royal artillery, who died after an operation for the removal of tonsils at a military hospital. A captain in the medical corps who was the anesthetist said that chloroform and ether were given by the open method, and when the surgeon had removed one tonsil it was necessary to use Junker's apparatus by which the anesthetic was given through a nostril. In the assembling of this apparatus an error was made, with the result that when he pumped, instead of the patient getting the chloroform vapor in the nostril he received liquid chloroform. The mistake was immediately discovered and measures were taken to deal with the situation. The patient showed signs of collapse, and, although he revived, he died twenty hours later from acute edema of the lungs brought about by the chloroform poisoning. In reply to the coroner the anesthetist said that a corporal in the laboratory assembled the apparatus, and he (the witness) did not notice that anything was wrong with it. In recording a verdict of accidental death the coroner expressed the hope that such an accident would never occur again in the hospital and that extreme care would be exercised in the preparation of such apparatus.

PARIS

(From Our Regular Correspondent)

Feb. 2, 1927.

Suprarenal Insufficiency in Grave Diphtheria

A discussion on suprarenal insufficiency in diphtheria developed recently before the Société de pathologie comparée. It has been M. Lereboullet's observation that the suprarenal glands are affected by the diphtheria toxin. In one case out of five at least, lesions of these glands are evident in children who have died from diphtheria. Moreover, symptoms observed in grave diphtheria are often referable to suprarenal insufficiency. The recent researches of M. Lereboullet and his collaborators on hypoglycemia in these patients have established that hypoglycemia is encountered in the majority of cases. The glycemia becomes normal in convalescence. Another argument in favor of suprarenal insufficiency in diphtheria is that the hypoglycemia is similar to that of patients with Addison's disease. Employing this idea in therapeutics, M. Lereboullet reduced the mortality from grave diphtheria 20 per cent by combining suprarenal organotherapy with the ordinary antidiphtheritic serotherapy.

Length of Absence from Public Schools Following Contagious Diseases

The minister of public instruction has issued an order establishing officially the length of absence from school that is required of convalescents from contagious diseases. The rule applies also to brothers and sisters of patients: mumps, twenty-one days from the onset of the disease; whooping cough, thirty days after complete disappearance of the fits of coughing, as confirmed by a medical certificate; chickenpox, sixteen days after the onset of the disease; rubella, or German measles, the same; typhoid and paratyphoid fever, twenty-eight days after recovery, as confirmed by medical certificate; dysentery, the same; cerebrospinal meningitis, forty days after clinical recovery, as confirmed by medical certificate, readmission being dependent also on the presentation of evidence that the child is not affected with obstinate chronic coryza resulting from the disease (this period may be shortened if it is established by a certificate from a bacteriologist that, in two examinations made with an interval of a week, traces of meningococcus in the rhinopharynx could not be found); poliomyelitis, thirty days after the onset of the disease; diphtheria, thirty days after recovery, as confirmed by a medical certificate (this period may be shortened if two cultures, taken a week apart, prove negative on bacteriologic examination); smallpox, forty days after the onset of the disease, but the patient cannot be readmitted except on presentation of a medical certificate stating that the pupil does not have further crusts or scales and that he has had a thorough bath; scarlet fever, the same measures; measles, sixteen days; favus or trichophytosis, until recovery; trachoma, until recovery.

If the patient has not been isolated, his brothers and sisters are readmitted at the same time as he, unless they show signs of having become infected. If the patients have been isolated, the brothers and sisters are readmitted after an interval corresponding to the incubation period of the disease, plus two days, on the following conditions and with the reservations as stated: diphtheria, fifteen days after the isolation, unless the certificate of a bacteriologist is presented showing that, on two cultures being taken a week apart, the results were negative; smallpox, eighteen days; scarlet fever, eight days; measles, twenty-four days; mumps, twenty-four days; whooping cough, twenty-one days; chickenpox, eighteen days; rubella, or German measles, eighteen days; typhoid and paratyphoid, twenty-one days; dysentery, twenty-one days;

cerebrospinal meningitis, twenty-eight days, except on presentation of a bacteriologic certificate establishing that, after two cultures were taken a week apart, further trace of meningococcus in the rhinopharynx could not be found; poliomyelitis, twenty-eight days; favus or trichophytosis, suspension not imposed; trachoma, suspension not imposed.

The Annual Budget of the Service of the Assistance Publique in Paris

The 1927 budget of the Assistance publique of Paris will amount to about 392 million francs, a sum considerably larger than the amount required in earlier years. The receipts from some quarters have diminished while the expenditures have increased. An important part of the ordinary resources of the Assistance publique consists of revenue from private donations. The funds placed with the French government continue to bear interest, while the sums derived from the rent of buildings, owing to the new laws permitting the advance of rents, have doubled and tripled. But the expenses of upkeep and repair of these buildings, almost all of them very old, and some almost in ruins, have increased in the same proportion. On the other hand, the levies on theaters and pleasure resorts (another source of the budget) have been doubled. Hospital charges also have been greatly increased. In spite of these facts, the budget has a large deficit, which can be covered only by increasing the subvention granted by the city of Paris.

The reasons for the deficit are numerous: The restoration of old hospitals and the building of new hospitals, homes for convalescents and sanatoriums outside of Paris (Bligny, Ormesson, Berck, Hendaye) have necessitated construction work, the cost of which has increased, and the general administrative expenses have increased.

BELGIUM

(From Our Regular Correspondent)

Dec. 14, 1927.

Annual Session of Neurosurgical Society

SURGERY OF PAIN

The Groupement belge d'études oto-neuro-ophtalmologiques et neuro-chirurgicales recently held its annual session, at which Dr. Leriche of Strasbourg discussed the indications and the results of division of the cervical rami communicantes in the "surgery of pain." He has performed ramisection in thirty-two cases, sixteen of which have involved the cervical rami. The section is rarely accompanied by pain (two cases); in three cases there was a transient headache. It does not affect the muscles. Leriche has performed section of the rami communicantes in angina pectoris, Raynaud's disease and ascending neuritis, with good results. He prefers to make the intervention as restricted as possible, dividing the superior portion of the chain and sectioning the communicantes that have their origin in the stellate ganglion.

AXON REFLEXES

Dr. Albert has established the effects of certain anesthetics on axon reflexes: (1) Neither from the experimental nor from the clinical standpoint can one compare the effect of nerve blocking with the effect of section of the same nerve at the same site, even though blocking is followed by degeneration; (2) the blocking of nerves enables one to prevent (at least, for a time) such axon reflexes as may be the cause of grave disorders; (3) since certain axonic vasomotor reflexes of short duration may produce disturbances that persist some time, it may be desirable, either in recent traumatisms or in the course of certain surgical interventions, to suppress axon reflexes by blocking the whole region (Crile), and (4) one cannot rely on any general anesthetic whatever, or whatever may be its mode of administration, to abolish the axon reflexes.

DORSAL NEURORAMISECTOMY IN THE GASTRIC CRISES OF TABES

Drs. Van Bogaert and J. Verbruggen of Brussels hold that the sensory fibers of the posterior roots, the afferent fibers of the anterior roots, and the fibers of the rami communicantes are all involved in the production of pain. Physiologic intervention should therefore consist in section of both roots and the rami communicantes. That is the intervention accomplished by these physicians by the extraspinal route. They have applied it in two instances in the gastric crises of tabes, associated with intense pain that resisted all other treatment, with excellent results.

The Prophylaxis of Measles in Dispensaries for Infants

The number of infants brought to the consultation centers established by the Oeuvre nationale de l'enfance is, at certain times of the year, so great that the gathering of so many children of early age in the same room may precipitate an epidemic, and, particularly, an epidemic of measles. In order to accomplish precise results in measles prophylaxis, the Oeuvre nationale de l'enfance considered it advisable to organize a center for the collection of convalescents' serum. An application of serotherapy will thus be made on a wide scale; but it is of even greater importance to discover the foci of contagion. This is effected through the aid of visiting nurses, who go to the homes and are thus in a position to learn the causes of contagion. In the dispensaries, one may, by way of experiment, make the wearing of a veil obligatory during the consultation.

The Paul Heger Fund

The Academy of Medicine has appointed a committee to make arrangements for the commemoration of the life and works of Dr. Paul Heger. The committee plans the publication of a memorial volume in his honor. In addition, it announces that a special fund will be created and placed at the disposal of the occupant of the chair of physiology at the University of Brussels, with a view to rendering personal aid to investigators or to make possible the carrying out of researches that are difficult under present economic conditions.

Course in Physical Therapy

The Faculté de médecine of Brussels has organized a clinical course in physical therapy which is obligatory for students preparing for their doctorate. Professor Gunzburg, who is in charge of the course, began his clinical instruction with a comprehensive lecture on scapulohumeral periarthritis.

A University Committee on Colonia' Expansion

A university committee on colonial expansion has been created in Brussels. In a pamphlet addressed to the students, one paragraph interests particularly students of medicine. Herein are set forth the many reasons that ought to induce them, on leaving the university, to devote themselves to a career in the colonies. There are not sufficient Belgian physicians on the Congo. Half of the physicians there are foreigners. In addition, many reasons of a medical or scientific nature should attract young physicians toward the colonies, for tropical medicine is a subject of prime importance. Furthermore, colonizing races have a responsibility toward the peoples whom they colonize, and should assure them a more comfortable existence from every point of view. At present, diseases are carrying off every year large numbers of the black race, and are putting the natives in a condition of lessened resistance. Tropical diseases yield readily to proper medical treatment, but there are not sufficient physi-

cians to apply the needed treatment. It is the duty of Belgian physicians to devote themselves to the task of raising health standards among the black race.

The International Agreement with Regard to the Treatment of Venereal Patients in Ports

An international agreement has been signed in Brussels relative to the providing of suitable treatment for merchant sailors affected with venereal disease. The agreement was accepted by the representatives of Argentina, Belgium, Cuba, Denmark, Finland, Great Britain and Ireland, Greece, Italy, Monaco, France, Peru, Roumania, Sweden, Canada and New Zealand. The signatories agreed to establish and to maintain, in all their principal sea and river ports, venereologic services, open to all merchant sailors without regard to nationality. These services will have a specialized medical personnel and a material equipment that will be kept abreast of the progress of science. They will be installed and will function under such conditions as will furnish easy access to the persons concerned. The services will be provided with an adequate number of hospital beds, and their facilities will be in proportion to the demands that the character of navigation imposes. Medical care and the needed drugs will be supplied gratuitously; also hospitalization will be provided free when found to be necessary. Patients will receive also a supply of drugs for the coming voyage.

BERLIN

(From Our Regular Correspondent)

Feb. 5, 1927.

The Number of Children in Berlin in Laborers' and Middle Class Families

Benjamin, school physician of Berlin, has given the results of his scrutiny of the statistical observations made by two school physicians in the district of Wedding in connection with the admission to the schools of the children born in 1,532 families during the school year 1919-1920. It was evident that the tendency of the proletariat in the large cities to restrict the number of offspring to one and two children is marked, and in the lower middle class it is even greater. In 75 per cent of the families of considerably more than six years' standing, on the average, there were only one or two living children. In the Catholic schools there were 66.3 per cent, and in the public schools there were 65.6 per cent of the families with only one or two children. In the Protestant schools there were 9.6; in the Catholic schools, 12.7 per cent, and in the public schools, 15.4 per cent of the families with six or more living children. Birth control spreads from the well-to-do classes of the burghers to the middle class and the proletariat (as shown by separate statistics taken in school districts with better and more expensive and with poor and cheap dwellings and apartments). For the most part, the small number of children exists because it is desired.

Results of Smallpox Vaccination in Germany, 1921-1923

During the period 1921-1923, the number of children subjected to the first vaccination decreased from 1,300,000 to 1,170,000. The number of unvaccinated children increased from 14.5 to 18.8 per cent. The number of children who were allowed to postpone vaccination on the basis of medical certificates increased, but the number of children who, contrary to law, failed to be vaccinated was even greater (more than 5 per cent in 1923). At the first vaccination there were from 95 to 96 per cent of "takes." The number of persons revaccinated, in accordance with law, also decreased. Revaccination was successful in 93 per cent of the cases in which it was applied. The number of children who failed to be revaccinated as required by law ranged from 3.6 to 6 per cent (the latter figure in 1923). The number of deaths from subsequent infection of the site of the vaccination during the three years were two, eight and six, respectively, or a total of sixteen. In a few cases there was some doubt as to the causal relation between vaccination and a subsequent fatal illness.

The Present Status of Cancer Research

Prof. Otto Warburg of the Kaiser Wilhelm Institut in Berlin-Dahlem in a recent article reaches the following conclusions on the present status of cancer research: Through the application of methods in which the physiology of the cell plays a predominant part, a field has been opened up in which physics and chemistry, or the measure and number of things, prevail. Even now, it cannot longer be said that the nature of the cancer cell is entirely unknown. We know today about as much concerning the cancer cell as we do of the yeast cell, and more than we know about any other diseased body cells.

Anniversary Celebration of Psychiatric Society

January 31, the Berliner Gesellschaft für Psychiatrie und Nervenheilkunde celebrated its sixtieth anniversary. The society was founded by the psychiatrist Griesinger, and in the earlier years of its history was concerned solely with psychiatry. Eleven years after the society was first founded, the designation "und Nervenheilkunde" was added, because, in the meantime, through the works of Charcot, Helmholtz and other investigators, "neurology" had been created. Addresses deserving special mention were those of Geheimrat Ziehen (who was formerly professor of neurology in Halle and Berlin but who, a few years ago, deserted medicine to go over to philosophy and is now an occupant of the chair of philosophy in Halle), on "Psychiatry and Philosophy"; Birnbaum, on "Personality and Psychosis"; Hildebrandt, on "The Notion of Value in Psychiatry"; Forster, on "Art in Relation to Psychiatry," and Fedor Krause, on "Operations on Tumors of the Pituitary Body."

Death of Professor Perthes

Prof. Georg Perthes, professor of surgery in Tübingen, died suddenly, January 3, in Arosa (where he had gone, as often in previous years, to take part in winter sports), aged 57. His career was determined by his period of assistantship under Trendelenburg in Bonn. When Trendelenburg, in 1895, accepted a call to the University of Leipzig, Perthes accompanied him, and in 1898 became an instructor in that institution. In 1903, he was appointed director of the surgical policlinic institute in Leipzig. In 1910, he succeeded Bruns as professor of surgery at the University of Tübingen. His name has become known more particularly through the Perthes suction treatment of pleural empyema, and by his description of osteochondritis deformans coxae. He published numerous articles also in various other fields.

Marriages

EUGENE W. BEAUCHAMP, Springfield, Mass., to Miss Marguerite Lapierre of Minneapolis, in January.

WILLIAM E. HOFFER, Franklin, Ohio, to Miss Nano Paul of New York, in December, 1926.

LOUIS W. SCHWINDT to Miss Pauline Maud Millington, both of Philadelphia, January 21.

JOHN B. MCNULTY to Miss Eliza Catherine Myers, both of Memphis, Tenn., January 17.

EUGENE L. HASTINGS, Raymond, Ill., to Miss Opal Leigh of Taylorville, January 24.

JEFFERSON H. CLARK, Philadelphia, to Miss Aileen Dixon at Payson, Utah, January 1.

Deaths

William Francis Becker, Wauwatosa, Wis.; Medical Department of Columbia College, 1882; emeritus professor of psychiatry, Marquette University School of Medicine, Milwaukee, and formerly professor of mental and nervous diseases, Wisconsin College of Physicians and Surgeons; member of the American Psychiatric Association; at one time on the staff of the Milwaukee County Hospital; aged 66; died, January 29, at Hartland, Wis., of cerebral hemorrhage.

Francis Adonijah Lane ✠ Chicago; Missouri Medical College, St. Louis, 1899; professor of ophthalmology, University of Illinois College of Medicine; member of the American Ophthalmological Society; on the staffs of the Illinois Eye and Ear Infirmary, the Presbyterian and Illinois Central hospitals; aged 52; died, February 17, at the Grant Hospital, of diabetes.

Erick **Archibald Adams,** Wilkes-Barre, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1913; member of the Medical Society of the State of Pennsylvania; served during the World War; on the staff of the Wilkes-Barre General Hospital, where he died, Dec. 11, 1926, following an operation for chronic appendicitis, aged 36.

Robert **Hagedorn Bolling,** Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1889; served during the World War; chief surgeon of the United States lines; aged 59; died, February 18, at the Chestnut Hill Hospital, of peritonitis, following an operation for perforated duodenal ulcer.

William **Troy Harper,** Southern Pines, N. C.; Jefferson Medical College of Philadelphia, 1920; member of the Medical Society of the State of North Carolina; aged 35; died, January 8, at the U. S. Veterans' Hospital number 60, Oteen, of tuberculosis of the lungs, intestine and larynx.

Joseph Francis Delahunt, West New York, N. J.; New York Homeopathic Medical College and Flower Hospital, 1914; member of the New Jersey State Medical Association; member of the West New York Board of Education; aged 35; died, January 31, of chronic nephritis.

Marcus Tullius Cicero Scott, Headland, Ala.; Birmingham Medical College, 1897; member of the Medical Association of the State of Alabama; president of the Headland Farmers' and Merchants' Bank; aged 56; died, February 2, at a hospital in Mobile, of pellagra.

Cornelius Edward Walsh, Flushing, N. Y.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1906; member of the Medical Society of the State of New York; aged 47; died in January, at the Neurological Institute, New York, of brain tumor.

Ralph Edwin Morris ✠ St. Paul, Minn.; University of Colorado School of Medicine, 1902; instructor in medicine, University of Minnesota Medical School; member of the American College of Physicians; aged 47; died, January 27, of heart disease.

Jacob Chase Rutherford ✠ Wakefield, R. I.; University of Vermont College of Medicine, Burlington, 1882; on the staffs of the South County Hospital, Wakefield, and Rhode Island Hospital, Providence; aged 71; died suddenly, February 15, of heart disease.

Bertolet Perry Rosenberry ✠ Winona, Minn.; University of Michigan Medical School, Ann Arbor, 1904; member of the Radiological Society of North America; served in the World War; aged 45; died, January 18, of myocarditis.

Charles William Bohmfalk, New York; Medical Department of Columbia College, New York, 1884; member of the Medical Society of the State of New York; aged 67; died, January 28, at Beacon, of cerebral hemorrhage.

Walter Edward Elwell ✠ Portland, Maine; Medical School of Maine, Portland, 1887; formerly on the staff of the Maine General Hospital; aged 60; died, January 13, of heart failure, following an operation on the thyroid gland.

Silas Evans, Paris, Ky.; Hospital College of Medicine, Louisville, 1882; for many years health officer of Paris; aged 70; died, January 30, at the Massie Memorial Hospital, of bronchopneumonia and chronic nephritis.

Charles Alling Tuttle ✠ Clinton, Conn.; Yale University School of Medicine, New Haven, 1890; past president and secretary of the Connecticut Medical Examining Board; aged 62; died, January 18, of heart disease.

Benoni Stinson Rose ✠ Evansville, Ind.; Louisville (Ky.) Medical College, 1894; on the staff of the Deaconess Hospital; aged 57; died, February 10, at Bradentown, Fla., of hemorrhage due to duodenal ulcer.

Josiah T. Kretsinger ✠ Leaf River, Ill.; Bellevue Hospital Medical College, New York, 1885; for twenty years secretary of the Ogle County Medical Society; aged 78; died, February 7, of hypostatic pneumonia.

Charles John O'Keefe ✠ Marble Rock, Iowa; Drake University College of Medicine, Des Moines, 1895; past president of the Floyd County Medical Society; aged 54; died, January 13, of heart disease.

George Washington Ellison, Spencer, Mass.; College of Physicians and Surgeons, Boston, 1894; member of the Massachusetts Medical Society; aged 62; died, February 14, of pneumonia.

James Skiffington Grant, Ningpo, China; University of Michigan Medical School, Ann Arbor, 1889; for many years a medical missionary; aged 65; died, January 29, of pneumonia.

Thomas Francis Parker, Marcus, Wash.; University Medical College of Kansas City, 1898; connected with the U. S. Public Health Service; aged 64; died, January 26, of septicemia.

Frederick William Wesseler, St. Louis; St. Louis Medical College, 1866; an affiliate fellow of the American Medical Association; aged 85; died, February 6, of arteriosclerosis.

John Clifton Epperson, Kansas, Ill.; Cooper Medical College, San Francisco, 1882; formerly county coroner; aged 78; died, January 26, of heart disease and arteriosclerosis.

Mary Reis Melendy, Chicago; Bennett College of Eclectic Medicine and Surgery, 1877; aged 85; died, February 17, of acute dilatation of the heart and pulmonary edema.

Gerasine Richard, Opelousas, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1896; aged 55; died, February 1, of cerebral hemorrhage.

Friend Conner, Reinbeck, Iowa; Medical College of Ohio, Cincinnati, 1894; formerly county coroner; died, January 12, at Portland, Ore., of cerebral hemorrhage.

Walter B. Carter, Bartlett, Tenn.; Memphis Hospital Medical College, 1893; aged 57; died, February 12, at the Gartly-Ramsay Hospital, Memphis, of peritonitis.

Edward Molloy ✠ Waterloo, Iowa; Northwestern University Medical School, Chicago, 1904; aged 54; died recently, at St. Francis Hospital, of skull fracture.

Robert Marion McCall, Metropolis, Ill.; University of Louisville (Ky.) School of Medicine, 1876; aged 79; died, February 6, of cerebral arteriosclerosis.

John Robinson Poore, Santa Barbara, Calif.; Medical School of Harvard University, Boston, 1895; aged 62; died, January 19, of cerebral hemorrhage.

J. Hugh Carter ✠ Memphis, Tenn.; Memphis Hospital Medical College, 1905; aged 46; died, February 7, at the Gartly-Ramsay Hospital, of myocarditis.

Don Singletary, Clinton, Ky.; University of Louisville (Ky.) School of Medicine, 1875; Civil War veteran; aged 85; died, January 21, of influenza.

Edwin C. Hunter, Washington, D. C.; Georgetown University School of Medicine, Washington, 1903; aged 45; died, February 11, of heart disease.

Hill Sloane Warwick, Los Angeles; Medical Department of Columbia College, New York, 1887; aged 61; died, Dec. 9, 1926, of bronchopneumonia.

William Ascher Shepard, Los Angeles; Hahnemann Medical College and Hospital, Chicago, 1877; aged 90; died, February 7, of myocarditis.

Isaac Miller Cady, Gay, Mich.; Detroit College of Medicine and Surgery, 1907; aged 55; died, February 15, of carcinoma of the pancreas.

John B. Watson, Jr., St. Marys, W. Va.; College of Physicians and Surgeons, Baltimore, 1887; aged 64; died, Nov. 28, 1926, of heart disease.

George Jacob West, Binghamton, N. Y.; Bellevue Hospital Medical College, New York, 1880; aged 68; died, February 7, of pernicious anemia.

Robert A. Rambler, Harrisburg, Pa.; Jefferson Medical College of Philadelphia, 1883; aged 68; died, January 4, of heart disease.

William H. Franks, New Carlisle, Ohio; Rush Medical College, Chicago, 1874; aged 85; died, February 4, of paralysis.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

Ambrozoin Tablets.—The American Apothecaries Company, Astoria, N. Y., shipped to California in August, 1925, a quantity of "Ambrozoin Tablets," which were declared misbranded. When analyzed by the federal chemists, the tablets were found to contain ammonium chloride, licorice extract, a calcium compound, traces of terpin hydrate and an iodide. They were sweetened with saccharin and colored pink. The claims made for the tablets were declared false and fraudulent and in September, 1926, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 14628; issued February, 1927. Chem. Suppl. 223.*]

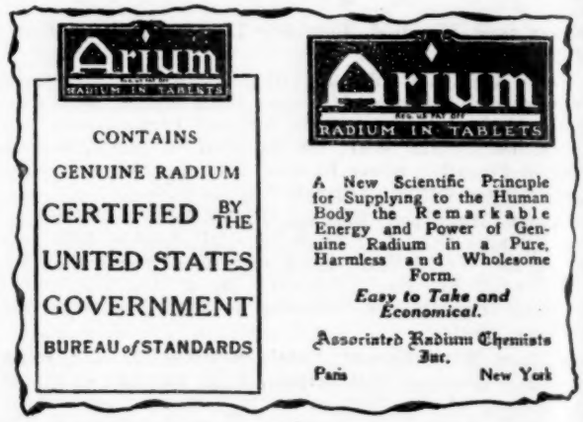
Flam.—The Flam Company of Chicago shipped to Milwaukee, Wisconsin, in February, 1926, 20 dozen bottles of "Flam," which the government authorities declared misbranded. The preparation, when analyzed by the Bureau of Chemistry, was found to be a flavored syrup containing ammonium chloride and bromide, with small amounts of sodium benzoate and glycerin. The therapeutic claims made were false and fraudulent, and in October, 1926, judgment of condemnation and forfeiture was entered, and the court ordered that the product be destroyed.—[*Notice of Judgment 14640; issued February, 1927. Chem. Suppl. 223.*]

FLAM
COUGH REMEDY
For Colds, Coughs and Throat Affections.
Has Helped Thousands of People
Highly Recommended for Asthma, Bronchitis and Whooping Cough.
STOP YOUR COUGH
Get It at Your Druggist Today
Chi. Apr. 1-11-26

Lemke's Blood Drops and Laxative Herb Tea.—The Dr. H. C. Lemke Medicine Company, Chicago, shipped in December, 1925, a quantity of "Dr. Lemke's Blood Drops" and also of "Dr. Lemke's Laxative Herb Tea." These were declared misbranded by the federal authorities. The "Blood Drops," when analyzed in the Bureau of Chemistry, were found to consist of extracts of plant drugs, including aloe, together with sugar, alcohol and water. The "Herb Tea" was found by the same chemists to consist of a mixture of powdered senna, with small portions of althea, fennel, buckthorn, elder, coriander, sassafras, flaxseed, lavender, American saffron, licorice, bear-berry, mullen, yarrow, boneset and peppermint. Doubtless, the theory of the therapeutic action of this mixture was that if the first eight ingredients did not get in their work, the second eight might. Both of these preparations were sold under claims that were false and fraudulent and in June, 1926, judgment of condemnation and forfeiture was entered, and the court ordered that the product be destroyed.—[*Notice of Judgment 14308; issued October, 1926. Chem. Suppl. 217.*]

Bronchini.—The William M. Chappelear and Sons Company of Zanesville, Ohio, shipped in October, 1924, and February, 1925, to Wheeling, West Virginia, a quantity of "Chappelear's Bronchini," which the federal authorities declared was misbranded. When analyzed in the Bureau of Chemistry, the preparation was found to consist of ammonium chloride, extracts of plant drugs, flavoring material, including oils of anise and sassafras with sugar, alcohol and water. The product was declared misbranded, first, because the therapeutic claims were false and fraudulent, and, secondly, because while it was labeled as containing 40 per cent by volume of alcohol, it contained much less than this. In October, 1925, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 14501; issued January, 1927. Chem. Suppl. 221.*]

Arium Tablets.—The Associated Radium Chemists, Inc., New York, shipped in January and May, 1926, a quantity of "Arium Tablets" that the federal authorities declared were misbranded. When analyzed by the Bureau of Chemistry, the stuff was found to be composed mainly of lithium carbonate, starch and talc, with 8.58 millimicrograms of radium to each tablet. The claims made for the use of this nostrum were so preposterously false and fraudulent that in August, 1926, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notices of Judgment 14533 and 14534; issued January, 1927. Chem. Suppl. 221.*]



Moorite Mineral Powder.—The Moorite Products Company, Seattle, Washington, shipped into California in October, 1925, a quantity of "Moorite Mineral Powder" that was declared misbranded. Some of the claims made for the preparation were:

". . . especially recommended for the treatment of Rheumatism, Neuralgia, Neuritis, Indigestion, Stomach Trouble, Kidney and Liver Trouble, Catarrh, Varicose Veins, Burns, Scalds, in fact all inflamed conditions."

"Purifies the Blood, Aids Digestion, Eliminates Bowel and Stomach Gases, Relieves Aches and Pains, Unequalled for Scalds and Burns."

A Household Necessity
Reduces Inflammation
MOORITE
MINERAL
A Product of Nature's Wonderful Laboratory
ALL THE BENEFITS DERIVED FROM MINERAL SPRINGS SECURED BY USING MOORITE MINERAL AT YOUR HOME
Read this Booklet Carefully—It May Save You a Lifetime of Suffering
Moorite Products Are For Sale by Your Druggist
MOORITE PRODUCTS COMPANY, Inc.
1103 Post Street
Seattle, Wash.

When the stuff was analyzed by the Bureau of Chemistry, it was found to consist of powdered clay! Naturally, the claims were declared false and fraudulent, and in May, 1926, judgment of condemnation and forfeiture was entered, and the court ordered that the product be destroyed.—[*Notice of Judgment 14365; issued November, 1926. Chem. Suppl. 218.*]

Correspondence

IMMUNITY TO CANCER: CANCER AND CIVILIZATION

To the Editor:—In his letter on cancer of the breast in Japan (THE JOURNAL, January 29, p. 342) Hoffmann says that "the statement made by Dr. Fried that 'mammary cancer is very frequent in Japan' is not supported." Those who read my letter will recall that this statement was made originally not by me but by a noted Japanese surgeon quoted by Prof. Pierre Delbet. I assume that it is not less reliable than the opinion of a few Hawaiian physicians cited by Hoffmann, who saw one or two cases of cancer of the breast in Japanese women in a lifetime.

But in my letter (THE JOURNAL, Oct. 23, 1926, p. 1411) I did not intend to dispute figures on the incidence of the morbidity or mortality from cancer. I simply outlined the complexity of the cancer problem and the difficulties that face even distinguished statisticians appointed by the League of Nations.

A critical attitude toward modern cancer statistics is current among those who are interested in cancer. H. Gideon Wells (THE JOURNAL, March 17, 1923, p. 737) does not attribute any value to existing cancer statistics in this country. Lubarsch (*Med. Klin.* **10**:299 [March 9] 1924); Staehelin (*Klin. Wchnschr.* **4**:1853 [Sept. 24] 1925) and Ménétrier (*Bull. Acad. de méd.* **95**:177 [Feb. 23] 1926), to quote only a few, are either skeptical or actually opposed to the idea that cancer occurs now more frequently than previously.

The opinion that there is an etiologic relationship between cancer and civilization is not supported by any scientific data. Moreover, investigations made by numerous European workers indicate the contrary. In my previous letter, I referred to the Deutsche Zentralkomittee für Krebsforschung, to the English Imperial Research Fund Expedition, and to two French reports from Morocco and Tunis, respectively, whose investigations indicated that cancer is as frequent among wild and uncivilized people as among Europeans. In a recent study on the incidence of cancer in central Africa Mouchet and Gérard (Le cancer et les noirs de l'Afrique centrale, *Bull. path. exotique* **19**:564, 1926) affirm that "the negroes from Central Africa are not only not refractory to cancer but one finds among them all the varieties of cancer seen in Europe."

B. M. FRIED, M.D., Boston.

IS MERCANTILE HEALTH SERVICE A DANGER OR AN ASSET TO MEDICAL PRACTICE?

To the Editor:—In THE JOURNAL, Dec. 25, 1926, p. 2180, is a review of "Health Control in Mercantile Life." The reviewer says: "Many physicians view with anxiety, if not with dread and alarm, present trends toward contract medical practice. . . . Is it for the good of the patients that they be treated with this type of service or is it preferable . . . that they be advised to select good physicians?"

Kindly allow me to point out a few facts disclosed by this six year demonstration in store health work:

An average of from six to twelve visits a year was voluntarily made by each person in at least a dozen stores where records were kept.

The cost of each visit averaged about 50 cents because the work was organized to use effectively the time of the physician, the nurse, the dentist, the dental hygienist and sometimes the physical educator. Part of this cost usually was paid by the patient through the mutual benefit association.

These visits in most cases were for symptoms not usually considered by the patient dangerous and therefore not in the patient's mind requiring a visit to a private physician, costing from $1 to $5, but the visits gave opportunity for the early application of preventive medical measures of value to the patient and through the patient to the business.

Again, while serious cases are successfully referred to specialists, hospitals and family physicians, it has been found very difficult to send patients with more "trifling" ailments, which do not immediately require absence from work. Workers voluntarily come to a store health department because they have confidence in the physician, the visit is already paid for, it is conveniently near, and little time is lost from work.

Does the fact that the physician is paid by check each month by the firm or a mutual benefit association with whom he has an agreement or contract, instead of by 50 cent pieces by each patient, seriously interfere with the character of medical work he is doing? Rather, is he not thereby relieved from an element of commercialism?

Is the industrialist or merchant, who has discovered that his personnel are more valuable to him than his machinery or merchandise, and that physical examinations and medical supervision are his best insurance of these valuable trained people, to be told that these services must not be organized, but that his sick must each "be advised to select good physicians" in the community? May not physicians with executive experience show how by organization scientific medicine can be brought to the aid of the worker in industry and commerce, to the great advantage of the worker and the renown of the medical profession?

A. B. EMMONS, 2D, M.D., New York.

PHYSICIANS IN RURAL COMMUNITIES

To the Editor:—I am interested in the discussions that arise from time to time in reference to the present dearth of physicians in rural communities in comparison with the past, and in the suggestions for the solution of the problem. I refer particularly to the editorial of February 12 and Dr. Pusey's discussion of the survey which he made.

We lose sight of the changing conditions and make erroneous comparisons. The country red school house where many of us once attended and taught is almost obsolete. The centralized school has replaced the country school, lessened the teaching personnel, established efficiency, and changed the educational problem of the rural community. Good roads and automobile transportation have made it possible. The development of hospitals in county seat towns and other towns of size to warrant hospitals is furnishing in medicine very largely that which the centralized school has furnished in education. In an address before the American Hospital Association in 1922 I emphasized this point, and more recently before the American Protestant Hospital Association. We need hospitals as complete workshops everywhere, and we need physicians trained to use them. A rural community should be afforded the same degree of medical and surgical skill as is afforded a city community. If a large percentage of persons who suffer from illness of consequence are hospitalized—and modern medicine demands that they shall be if they are to receive skilful care—then one physician can do well what was formerly done by a number of physicians with much less skill. Preventive medicine and the education of the public is lessening the need of useless family doctoring. I would not argue that there is no place for the family physician but a more important place where he will serve through an institution in which standards of practice are maintained.

Those who argue that we need a cheaper type of physician to meet this apparent demand lose sight of changed conditions, and apparently presume that a rural community does not hold health and life as precious as a city community, where the superior type of physician is supposed to exist.

WILLARD C. STONER, M.D., Cleveland.
Director of Medicine, St. Luke's Hospital.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BARTHOLIN GLAND INFECTION

To the Editor:—Under my observation there is a case of a swelled Bartholin gland. The patient does not have any other symptoms of a gonorrheal infection, except slight pain with micturition, which is not chronic. After taking a cervical smear, gonococcus was not found. The patient is 23 years of age and an only child. The father had a gonorrheal infection at the time of marriage. The mother received treatments for the same disease periodically from the birth of the child to the date of the operation, when all the diseased organs and parts were removed, causing sterility. The patient is unmarried. Could the swelling be caused from any other cause than gonococcus and, if not, could the patient be suffering from a chronic gonorrheal infection received some time during her childhood from her parents? There could not have been opportunity of receiving the infection from impure coitus. Please omit my name.

M.D., Chicago.

ANSWER.—While bartholinitis as a rule is of gonorrheal origin, any other pyogenic germ may produce the same condition. It is not unusual that a nonspecific infection is superimposed on an originally gonorrheal infection. Eventually the gonococci may disappear and only the germs that caused the secondary infection remain. Therefore the possibility of an early gonorrheal infection of the Bartholin gland in the case referred to must be admitted. The treatment in either instance is extirpation of the gland.

ALTITUDE AND HEART DISEASE

To the Editor:—In a case in which a man, aged 48, has lived for twenty years at an elevation of 4,000 feet with a well compensated mitral leak and has recently developed an aortitis, would there be apt to be any benefit following a removal to a lower altitude? Could a removal to a lower altitude stir up any trouble?

M.D., Illinois.

ANSWER.—There are really two conditions involved, the mitral leak and the aortitis, and two questions concerning each condition, the possible harm or benefit that might result from a change to a lower altitude.

As to the mitral leak, it is difficult to see how a change to the lower level would be harmful. On the other hand, there would be little benefit. If the man has endured the elevation of 4,000 feet for twenty years and the mitral lesion is well compensated, one would suggest letting well enough alone.

What should be done for the aortitis would depend on what is meant by that term. If it is an acute infectious affair, particularly if it is syphilitic, rest and appropriate treatment for the causative condition would be in order. Perhaps by aortitis is meant the more chronic degenerative atheromatous process. Whether acute or chronic, the lower level might be advantageous as tending to postpone the day of cardiac and vascular breakdown.

It may be said in general that an altitude of 4,000 feet is almost negligible, particularly in the case of one who has become habituated to it.

"ELECTROTHERMIC METHODS"

To the Editor:—Referring to THE JOURNAL, January 29, p. 346, under "Book Notices," in the criticism of Dr. Morgan's book "Electrothermic Methods," I note the following: "In dealing with electrocoagulation, he indulges in the common error of maintaining that in the modern diathermic apparatus the d'Arsonval current is employed." Will you be good enough to tell me wherein Dr. Morgan is in error? I have always felt that this is the only current with which we can obtain "coagulation" effects, by which I mean the "cooking" of the tissues, as distinct from the "charring" obtained in fulguration from the Tesla current, or the "drying" effect in desiccation which one gets from the Oudin current. What is electrocoagulation, and how is it obtained?

M.D., California.

ANSWER.—The differences between the d'Arsonval current and the current used in the modern diathermy apparatus are as follows:

The d'Arsonval current has from twenty to 100 sparks in the spark gap in one second; an identical number of oscillation groups with long pauses; high tension, as expressed by high voltage, and low intensity, as manifested by low amperage. In the diathermy current there are from 1,000 to 2,000 sparks per second, and the same number of oscillation groups with correspondingly shorter pauses. It is further differentiated by low tension (low voltage) and high intensity (high amperage). Electrocoagulation means the devitalizing of bodily structures by the heat produced through the resistance of the tissues to the high frequency current forced through them. The effect of this heating is the reduction of the tissues to an amorphous dead mass.

The modern diathermy apparatus furnishes any volume of current necessary for a thorough "cooking" of tissues.

This thorough destruction depends on the intimate contact of the active electrode or electrodes with the structure to be coagulated as well as on the proper volume of current.

Sparking and subsequent superficial charring of tissues may be produced with any current, provided the active electrode is kept at a distance from the object to be treated.

Desiccation is used to describe the cleaving of tissues with superficial destruction of the cells by needle shaped electrodes that carry the current emanating from an Oudin resonator, from radio tubes or from a specially constructed diathermy apparatus.

SULPHUR OINTMENT FOR SCABIES — TRINITROPHENOL — THOREK POULTICE

To the Editor:—1. What is the formula of the sulphur salve for the twenty-four hour treatment of itch, as originated by Lomholt of Copenhagen (or Ehlers)? 2. What is the usual formula for using trinitrophenol (picric acid) plain, and the same with liquified phenol (carbolic acid) in treating wounds — especially when these are substituted for iodine? 3. What is "Thorek's poultice"; how is it made, and what are the indications for its use? Please omit my name.

M.D., Missouri.

ANSWER.—1. The directions for the preparation of the ointment originated by Svend Lomholt of Copenhagen (1920) are as follows:

One kilogram of sublimed sulphur is mixed with 2 Kg. of 50 per cent solution of potassium hydroxide (as free from water as can be obtained). Gentle heat is applied until reaction ceases and the solution becomes clear. When the process is complete, one should be sure that the sulphur is in excess to a slight degree.

Petrolatum, 225 Gm., is mixed with wool fat, 225 Gm., without heat. To this mixture is added 375 Gm. of the solution of sulphur and potash mentioned above.

To 40 Gm. of 20 per cent sodium hydroxide solution is added 28 Gm. of zinc sulphate. The mixture is agitated thoroughly until the reaction ceases, poured on filter paper and washed thoroughly; then the washed precipitate is added to the foregoing.

Liquid petrolatum is added to obtain a total weight of 1,000 Gm.

Five grams of oil of bitter almond is added to lessen the somewhat disagreeable odor of hydrogen sulphide (THE JOURNAL, Feb. 9, 1924, p. 466).

The important elements in use of the ointment are as follows: The patient receives an ordinary cleansing bath, dries himself thoroughly, and afterward rubs the whole of his body, except his head, carefully with the ointment. The ointment must cover all the skin, but hard rubbing is neither required nor desirable. The patient ought then to wait for a quarter of an hour to give the ointment time to get into the skin; after this he can go to bed. The next day, at about the same hour, he receives a bath and fresh underclothing, and the treatment is finished. Meanwhile, all his clothes and bedding have been disinfected.

2. The saturated aqueous solution (about 1 per cent) of trinitrophenol is used as a compress in the treatment of burns. A saturated solution in 70 per cent ethyl alcohol, which is about 6 per cent, may be used instead of tincture of iodine in preoperative sterilization of the skin. The formula for iodized phenol in the German pharmacopeia is: iodine, 1 part; liquified phenol, 4 parts. Trinitrophenol might be substituted for the iodine.

3. The poultice referred to is apparently the product sometimes called the LaPorte treatment, which consists essentially of the application of a poultice of oatmeal moistened with a solution of aluminum nitrate and potassium nitrate (THE JOURNAL, April 30, 1921, p. 1265).

TOXIN-ANTITOXIN AFTER WHOOPING COUGH VACCINE

To the Editor:—Is there any contraindication to using toxin-antitoxin (diphtheritic) when a child has received, twelve months previously, whooping cough vaccine? Please omit my name.

M.D., Missouri.

ANSWER.—Since horse serum is not used in a whooping cough vaccine, the question of sensitization does not come up. Its use is not contraindicated.

NOVASUROL (MERBAPHEN) — NITROSCLERAN — CARDIAZOL

To the Editor:—Kindly send me a report of the analysis of the following drugs: (1) Novasurol (Winthrop Chemical Company, New York); (2) Nitroscleran (E. Tosse & Co., Inc., New York); (3) Cardiazol (E. Bilhuber, Inc., New York).

S. GARSON SLOBODKIN, M.D., Brooklyn.

ANSWER.—1. Novasurol (merbaphen) is the double salt of sodium mercurichlorphenyl oxyacetate with diethylbarbituric acid (barbital) (New and Nonofficial Remedies, 1926, p 255).

2. Basler states (*Deutsche med. Wchnschr.*, Aug. 7, 1925, p. 1310) that according to the manufacturer "Nitroscleran" has the following composition:

Sodium chloride, 6.0; sodium nitrite, 20.0; or 40.0; sodium phosphate, 3.6; potassium phosphate, 2.0; water to make 1,000.0.

A report of the A. M. A. Chemical Laboratory of an examination of a specimen of "Nitroscleran" received from a correspondent was confirmatory of the statement of Basler that the preparation is nothing more than a solution of the well known sodium nitrite dissolved in water to which some salts have been added.

Nitroscleran has not been accepted for New and Nonofficial Remedies, nor has E. Tosse & Company requested an examination of the product.

3. From German publications it appears that Cardiazol is claimed to be "Pentamethylentetrazol" and is one of a number of products which have been recently put out that are claimed to produce the therapeutic effects of camphor.

Cardiazol is a product of Knoll Aktiengesellschaft, Chemische Fabriken, Ludwigshafen a. Rh., Germany, marketed in the United States by E. Bilhuber, Inc., New York. Cardiazol has not been accepted for New and Nonofficial Remedies, nor has E. Bilhuber, Inc., requested an examination of the product.

A SMOOTH DIET LIST—THE DEFORMED CAP

To the Editor:—In THE JOURNAL, Dec. 18, 1926, p. 2086, is an article by W. C. Alvarez on "A Practical Treatment of Duodenal Ulcer." 1. Can you publish his "smooth diet" list? 2. Also what does he mean by "smooth cap" or "deformed cap" under the heading "diagnostic Value of the Treatment?" Please omit my name.

M.D., Ohio.

ANSWER.—1. The following is the smooth diet list recommended by Dr. Alvarez, who says:

The diet is based not only on practical experience but also on a number of scientific principles. We have no ferment in our digestive tracts which will dissolve cellulose, i. e., the fibrous part of vegetables and fruits. Most of this material is quite indigestible, and if we eat much of it we throw a heavy burden on the bowel. This fiber interferes with the digestion of starches and predisposes to flatulence.

If there happen to be narrow or irritated places in the bowel, or kinks with adhesions, the fiber may cause clogging and back pressure. The ideal diet in such conditions is one which leaves only a small liquid residue which can trickle past the obstructions; in this way it will often give prompt relief. This smooth diet is indicated also when the bowel is irritated, overly active and responsive to every stimulus.

It should be tried out faithfully at first, and then if it works well, other foods may be experimented with, one at a time. You may have learned by experience that some of the foods allowed on this list are hurtful to you; in that case leave them alone.

If you are to give this diet a fair trial, eat no coarse foods with fiber, skins, seeds or gristle. Avoid particularly salads with celery, tomatoes, cucumbers and pineapple, many of the green vegetables, raisins, berries, jams full of seeds, nuts, and many of the raw fruits. Beans, cabbage, onions, green or red peppers, melons, cucumbers and peanuts are notoriously gassy.

A person living in a boarding house can stick to this diet if he will simply avoid the forbidden foods and eat more of the digestible ones put before him.

Avoid sugar in concentrated form and take no candy or other food between meals. Hot cakes and waffles might not be bad if they were not eaten with so much syrup. Fried foods are not bad if they are properly fried, i. e., totally immersed in fat at the right temperature. Avoid eating when in a rush and when mentally upset. Family rows should be held away from the table. Chewing gum may cause distress, as much air is swallowed with the saliva. Digestion is greatly helped by a good chewing surface. If there are any gaps in your teeth, have your dentist fill them with bridges. Purgatives often cause flatulence and distress in the abdomen.

Choose from the following:

For breakfast: Orange juice; grapefruit (avoid the fiber in the compartments). Cantaloupe and melons are inadvisable. If desired, coffee in moderation. It sometimes causes flatulence. If sensitive to caffein, you may try "Kaffee hag" or Instant Postum. Chocolate, cocoa or tea allowed. One or two eggs with ham or bacon. (Avoid the tougher part of the bacon.) White bread, toast or zwieback with butter. Any smooth mush, such as farina, germea, cream of wheat, cornmeal or rolled oats. Puffed cereals and cornflakes are also allowed. Shredded wheat biscuits and other coarse breakfast foods are not allowed. Bran is particularly harmful. Graham bread is permitted, but not the coarser whole wheat bread.

For lunch and dinner: In fruit cocktails, avoid the pieces of orange and pineapple. Broths, bouillon, cream soups and chowder are allowed. Meat, fish or chicken, squab or game, excepting duck (avoid the fibrous parts and gristle). Veal may be tried; it is not digested well by many people. No smoked fishes or pork. Crab and lobster had better be left alone. Oysters and sausage may be tried later.

Bread and butter. Hot biscuits are allowed if they are made small so as to consist mainly of crust. Rice; potatoes baked, mashed, hashed brown or French fried. Later may try sweet potatoes; hominy; tomatoes stewed, strained and thickened with cracker or bread crumbs; well cooked cauliflower tops with cream sauce; asparagus tips; brussels sprouts; squash; beets; turnips; creamed spinach. Italian pastes; noodles, macaroni and spaghetti, cooked soft. Purées of peas, beans, lentile, lima beans or artichoke hearts. All skins or fiber should be removed by passing through a ricer. Sweet corn may be used if passed through a colander. There are practically no other vegetables that can be puréed to advantage. String beans are allowed if young and tender.

A good noodle is the Mueller egg noodle. A large very tender string bean which can be used as a vegetable or salad is put up by the De Luxe firm. A fine oatmeal can be obtained by calling for Robinson's Scotch Groats.

No salads at first. Later you may try a little tender lettuce with apples or bananas, tomato jelly or boiled eggs. Mayonnaise and fresh dressing are allowed. Potato salad without much onion may be tried.

Dessert: Simple puddings, custards, ice cream, jello, plain cake, canned or stewed fruits, particularly pears and peaches. Cottage cheese is permissible; other cheeses often cause trouble. Apple, peach, apricot, custard and lemon cream pie may be tried if only the filling is eaten.

If constipated, stewed fruit may be taken once or twice a day. In winter the dried pared fruit may be used for stewing. Prunes are probably the most laxative of fruits and, if eaten every other morning, will relieve the average case of constipation. They should be cooked slowly until they almost go to pieces. If the skins are still tough, spit them out. Apple sauce is much more palatable if made from unpared and uncored apples. The sauce is strained later. It may be mixed with a little tapioca or sago. The apples may be baked. Blackberries and loganberries can be stewed and strained and the sweetened juice thickened with cornstarch. This makes a delicious dish with the full flavor of the berries. Later you may try fully ripe pears and peaches. The raw starch in bananas is hard to digest. Apples, even when cooked, cause distress in many people.

Do not make any effort to drink water. Be guided by your thirst. Avoid excessive use of salt or other seasoning.

If you wish to gain in weight, eat as much cream, butter, fat and starch as you can. If you wish to lose or to stay thin, live largely on the vegetables, fruits and salads, with a moderate amount of lean meat.

2. The first portion of the duodenum is called the cap because in the roentgenograms the shadow often reminds one of a bishop's miter. More than 90 per cent of duodenal ulcers are located in that cap, and they generally produce enough puckering and scarring so as to be recognizable by the roentgenologist. A normal cap has smooth outlines.

GLUTEAL INJECTION OF MILK

To the Editor:—Will you kindly go into more detail about the gluteal injection of milk or casein preparations suggested in the treatment of urethritis and prostatitis (THE JOURNAL, February 5, p. 427), giving the methods of preparing the milk, the technic of injection, and the reactions to expect? Kindly omit name.

M.D., Connecticut.

ANSWER.—Ten cubic centimeters of freshly boiled milk that has been cooled is injected with a Luer syringe into one gluteus muscle; the needle used is of 1½ inches in length. It is important not to inject the milk into a blood vessel. In order to avoid such an untoward incident, after the needle is plunged into the muscle its distal end is watched for the appearance of blood. If blood appears, the needle must be withdrawn and reinserted at some other point. The injection of the milk is permissible only after a short observation of the distal needle end fails to show any blood. The injection should proceed slowly. The local reaction consists in the formation of a small lump that is the seat of dull pain and is sensitive to touch. This local reaction may be considerably mitigated by following the injection with a vibration massage continued for about five minutes. The general reaction manifests itself by rise of temperature, occasionally accompanied by a chill, high pulse rate and general malaise.

Both reactions, as a rule, decline after twelve hours. The local sensitiveness may persist for several days. Any special medication for the general reaction is not necessary.

The casein injection is performed in the same way. The ampules on the market contain 0.05 Gm. of casein. These injections may be repeated every third or fourth day after both local and general reactions have subsided. Both these phenomena are of a much milder character than the reactions following milk injections. The latter as a rule furnishes a much quicker therapeutic effect.

It is almost unnecessary to emphasize that these injections must be made under strictly aseptic precautions.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 7. Sec., Dr. Harry C. DeVighne, Juneau.

ARIZONA: Phoenix, April 5-6. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.

COLORADO: April 5. Sec., Dr. David A. Strickler, 1011 Republic Bldg., Denver.

DISTRICT OF COLUMBIA: April 12. Sec., Dr. Edgar P. Copeland, 1801 Eye St., Washington.

IDAHO: Boise, April 5-6. Commissioner of Law Enforcement, Hon. F. E. Lukens, Boise.

ILLINOIS: Chicago, April 5-7. Supt. of Registration, Mr. V. C. Michels, Springfield.

MINNESOTA: Minneapolis, April 5-7. Sec., Dr. A. E. Comstock, 636 Lowry Bldg., St. Paul.

MONTANA: Helena, April 5. Sec., Dr. S. A. Cooney, Helena.

NEW HAMPSHIRE: Concord, March 10-11. Sec., Dr. Charles Duncan, Concord.

NEW MEXICO: Santa Fe, April 11-12. Sec., Dr. W. T. Joyner, Roswell.

RHODE ISLAND: Providence, April 7-8. Sec., Dr. B. U. Richards, State House, Providence.

UTAH: Salt Lake City, April 5. Director of Registration, 412 State Capitol Bldg., Salt Lake City.

WASHINGTON: Seattle, April 11. Reciprocity meeting only. Asst. Director of Licenses, Mr. George L. Berger, Olympia.

WEST VIRGINIA: Charleston, March 16. Sec., Dr. W. T. Henshaw, Charleston.

WISCONSIN: Basic Science Board, Madison, March 19. Sec., Dr. M. F. Guyer, Madison.

Idaho October Examination

Mr. F. A. Jeter, ex officio secretary of the Idaho Medical Examining Board, reports the written examination held at Boise, Oct. 5-6, 1926. The examination covered 13 subjects and included 130 questions. An average of 75 per cent was required to pass. Of the 8 candidates examined, 7 passed and 1 failed. Eight candidates were licensed by reciprocity. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent
State University of Iowa College of Medicine	(1920)	79.4
University of Maryland School of Medicine	(1924)	86.1
Detroit College of Medicine and Surgery	(1896)	78.6
University of Michigan Medical School	(1903)	90.6
University of Minnesota Medical School	(1925)	85.1
Washington University School of Medicine	(1925)	82.9
Jefferson Medical College of Philadelphia	(1924)	84.6

FAILED		
College	Year Grad.	Per Cent
Hospital College of Medicine	(1904)	73.2

LICENSED BY RECIPROCITY		
College	Year Grad.	Reciprocity with
Northwestern University Medical School	(1909)	Utah
Rush Medical College	(1903)	Oregon
St. Louis University School of Medicine	(1924)	Missouri
Columbia University College of Phys. and Surgs	(1894)	New York
University of Oregon Medical School	(1924)	Oregon
University of Pennsylvania School of Medicine	(1897)	Oregon
University of Nashville Medical Department	(1902)	Washington
Trinity Medical College, Toronto	(1900)	Washington

Colorado October Examination

Dr. David A. Strickler, secretary of the Colorado Board of Medical Examiners, reports the written examination held at Denver, Oct. 5, 1926. The examination covered 8 subjects and included 80 questions. An average of 75 per cent was required to pass. Of the 26 candidates taking the physicians' and surgeons' examination, 15, including 1 osteopath and 1 undergraduate, passed, and 11, including 4 osteopaths and 1 undergraduate, failed. Nineteen candidates were licensed by reciprocity. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent
National Medical University, Chicago	(1909)*	85.7
Rush Medical College	(1926)†	85.7
University of Illinois College of Medicine	(1926)†	88.6
Harvard University	(1924)	90.9
Kansas City College of Medicine and Surgery	(1924)	85
St. Louis College of Physicians and Surgeons (1923) 75.1, 76.4, (1924) 76.2, 79.7, (1925) 78.3, (1926) 80.5	(1922)	81.6,
Lincoln Medical College of Cotner University	(1907)	75.1
Osteopath		75
Undergraduate		80.7

FAILED		
College	Year Grad.	Per Cent
Kansas City College of Medicine and Surgery	(1923)	58.6
Kansas City University of Physicians and Surgeons	(1922)	43.2
St. Louis College of Physicians and Surgeons (1920) 70.7, (1926) 69, 69.7	(1918)	60.3,
Osteopaths		37.6, 61.4, 66.7, 70.5
Undergraduate		72.1

LICENSED BY RECIPROCITY		
College	Year Grad.	Reciprocity with
College of Medical Evangelists	(1925)	California
Medical Department of Columbian University	(1897)	N. Carolina
Rush Medical College	(1912)	Nebraska
Drake University College of Medicine, Des Moines	(1910)	Iowa
Kansas Medical College, Topeka	(1897)	Kansas
Hospital College of Medicine	(1898)	Kentucky
University of Louisville School of Medicine	(1914)	Kentucky
Tufts College Medical School	(1921)	Mass.
Barnes Medical College, St. Louis	(1905)	Missouri, (1909) Kansas
Marion-Sims College of Medicine	(1897)	Missouri
Creighton University College of Medicine	(1925)	Nebraska
University of Nebraska College of Medicine	(1925, 3)	Nebraska
Albany Medical College	(1917)	New York
Western Reserve University School of Medicine	(1921)	Kansas
Jefferson Medical College of Philadelphia	(1906)	Penna.
University of Toronto Faculty of Medicine	(1908)	New York

* Cannot verify.

† This candidate has finished his medical course and will receive his M.D. degree on completion of a year's internship in a hospital.

Book Notices

THE ABDOMEN IN LABOUR: Being a General Practitioner's Clinical Study of the Parturient Abdomen. By Norman Porritt, M.R.C.S., L.R.C.P., Consulting Surgeon, Huddersfield Royal Infirmary. The Essay to which was awarded the Sir Charles Hastings prize of the British Medical Association, 1926. Cloth. Price, $1.75. Pp. 76, with 29 illustrations. New York: Oxford University Press, 1926.

This little book is interesting mainly in the side light it throws on obstetric practice in Britain. It deals with external examination of the abdomen in labor and presents facts that are the rudiments of obstetric teaching in this country and on the continent. In our textbooks and in our schools, abdominal inspection and palpation are taught thoroughly. That this essay should have been awarded a prize by the British Medical Association in 1926 indicates that even as late as this the first principles of obstetric diagnosis have not permeated the body of midwifery practitioners in that country any more deeply than they have in our own. The booklet is a plea for abdominal inspection and palpation in labor, and for the substitution of the dorsal, lithotomy, posture for the "usual obstetric position"—the patient curled up on her side—during labor. The author sets forth clearly the safety and comfort of abdominal examination as compared with vaginal, but, astonishingly, does not mention rectal exploration. The observations on abdominal inspection and palpation in the various positions and attitudes are well shown; also those of the progress of labor. Prolapse of the cord is the only complication in which the abdominal method does not avail; but here the stethoscope should help, although the author quotes Jellett as saying "This is an attention to the heart sounds rarely given." In placenta praevia, cancer, contracted pelvis and disease of the soft parts, he says that hemorrhage or delay in labor will indicate the unavoidable necessity for a vaginal examination. He says that twins are rarely suspected until after the birth of the first child. The author's arguments for the dorsal position during labor are the ones that were taught years ago as being in favor of the left lateral or "usual obstetric posture," the Sims. Those who preferred the British position held that it was easier to control the advance of the head; the perineum did not tear so often; it was easier to inspect and to cleanse the parts, and prolapse of the cord was obviated. It seems that these teachings were erroneous and that the dorsal position is better in all these respects. The author's conclusions are that abdominal examination of women in labor should displace vaginal examinations as the routine method of choice, and the dorsal posture should be adopted for delivery; vaginal examinations should be made only from necessity; midwives should be prohibited from making them; the restriction of the pracitioner to the abdominal method will reduce the number of forceps operations, but women must be educated to the dispensability of internal exploration as otherwise they would fear that their physician was not giving them the attention required. While in America this book would seem to be pointing to something that was already quite obvious, nevertheless it might be a good thing to call attention again to the value of abdominal

inspection and palpation. Many accoucheurs make such extensive use of rectal examination that the abdominal study is skimped or omitted. Some practitioners still rely on vaginal observations alone. For these this booklet comes as a timely reminder.

KLINISCHES LEHRBUCH DER INKRETOLOGIE UND INKRETOTHERAPIE. Herausgegeben von Professor Dr. Gustav Bayer und Professor Dr. R. von den Velden. Paper. Price, 27 marks. Pp. 423, with 37 illustrations. Leipsic: George Thieme, 1927.

This volume stresses the clinical and organotherapeutic aspects of endocrinology. The last chapters of the volume, on endocrines in internal medicine, psychiatry, pediatrics, gynecology, ophthalmology, otolaryngology and dermatology, are written by different authors, primarily specialists in these particular fields rather than in the endocrine field. In a volume of composite authorship, the different chapters will naturally have different values. The volume as a whole is intended for the orientation and guide of medical students and medical practitioners. As such, the present volume is neither one of the best nor one of the worst. It is fair on the whole and in some chapters quite good. Some of the things not so good are the following: In the chapter on endocrines in urology, Dr. Bachrach lists and discusses (p. 352) the following testes preparations (evidently proprietaries): "Testogan," "Testosanforte," "Neosex" and "Spermin." These are testes preparations to be taken by mouth for various testicular infirmities. This does not seem to be the best of guides for the physician of 1927. The author on the endocrine in otology leaves the impression that otosclerosis is due to endocrine disturbances. The only question left open is whether it is a uniglandular or a pluriglandular disturbance. In the chapter on general organotherapy, Dr. von den Velden cites, as evidence that the roentgen ray may be used to stimulate ovarian activity, the case of a 35 year old woman, a primipara, with amenorrhea for one and one-half years after the birth of the child. The ovaries were irradiated twice with a three months interval; six weeks later menstruation returned, and a year and a half later she gave birth to a healthy child. Such instances may be multiplied by the hundreds, but they are not evidence that the roentgen ray actually stimulated ovarian function. The present volume, in spite of the weakness of some of the chapters, is a more creditable contribution to medicine than the book on the same general subject written by Dr. Bayer in collaboration with Dr. Jauregg, in 1914.

DISEASES OF WOMEN. By Harry Sturgeon Crossen, M.D., F.A.C.S., Professor of Clinical Gynecology, Washington University Medical School. Sixth edition. Cloth. Price, $11. Pp. 1005, with 934 illustrations. St. Louis: C. V. Mosby Company, 1926.

This edition fully upholds the splendid reputation already established by the five previous editions, and includes many additional methods of diagnosis and treatment which have appeared in recent literature. Roentgen-ray examination in gynecology is afforded an especially generous space, and the following are its uses, according to the author: 1. To determine the patency of the fallopian tubes, by demonstration of abdominal pneumoperitoneum after intra-uterine insufflation of gas. 2. To show fetal bone shadows in obscure cases of pregnancy. 3. To determine the presence of adhesions and other pathologic conditions by roentgen-ray examination of the pelvis after the production of pelvic pneumoperitoneum. 4. To visualize uterine and tubal cavities with iodized oil. Under the second indication mentioned, Crossen quotes Bartholomew et al. that positive bone shadow roentgen-ray evidences of pregnancy do not appear until from four and one-half to five months after conception. This is an error, as others (Stein, I. F., and Arens, R. A.: Interpretation of Early Fetal Roentgenograms, *Radiology* **3**:110 [Aug.] 1924) have reported positive fetal bone shadows as early as thirteen or sixteen weeks. The work of Peterson is chiefly quoted under diagnostic pneumoperitoneum, and just credit is given for his most important contribution. Illustrations of his method are included. The latest addition in this field is the use of iodized oil in gynecologic diagnosis. Newell's picturesque and important work is accurately quoted and five cases are illustrated demonstrating the uses of the opaque mediums and roentgenographic visualization of the lumens of uterus and tubes. The treatment of lacerations of the cervix receives considerable space; and various methods, such as linear cauterization, amputation and conical excision, are all described and illustrated. The subject of sterility, unfortunately, is handled in outline form. This subject is so important for the gynecologist that more detailed description of diagnostic procedures, even at the expense of repetition, might be desirable. The book, taken as a whole, compares favorably with the best books in gynecology of our times. It is excellently and profusely illustrated with half tones and black and white pen drawings.

LA ROUGEOLE, EPIDÉMIOLOGIE, IMMUNOLOGIE, PROPHYLAXIE. Par Robert Debré et Pierre Joannon. Paper. Price, $1. Pp. 288, with 35 illustrations. Paris: Masson & Cie, 1926.

The subject of this book is the epidemiology, immunology and prevention of measles. The purpose of the authors is to set forth the gravity of measles at the present time and the great need of making full use of the newer means of measles prevention. The first part deals with epidemiology. It is shown that near the end of the last century the deaths in Europe from measles began to increase and that they now exceed the deaths from scarlet fever, whooping cough or diphtheria. In France 30,000 infants died from measles in eight years, and in the registration area of the United States, measles took more than 100,000 lives between 1901 and 1920. Mild in the country and among the better classes in the cities, measles is a grave disease indeed among the young of the poorer classes in cities. The high death rate of measles in hospitals is due in large measure to complications that exist on admission. In the second part, in discussing immunity to measles, it is emphasized that infants whose mothers have had the disease are absolutely protected for at least two if not three months, while those of mothers who have not had measles are susceptible from birth. The congenital immunity to measles is nearly always passive, as a result of placental transmission of antibodies, and strengthened perhaps by breast feeding. In convalescents from measles, the maximal concentration of antibodies in the blood is reached from the seventh to the tenth day after the fall of the temperature; a gradual decline in antibody strength of the blood ensues, but a point is reached at which the strength remains constant for a long time, perhaps the rest of life. In the third part, on prevention, emphasis is placed on efforts to prevent crowding and on the use of convalescent serum. The methods of obtaining, preserving and injecting the serum are clear and detailed. This method of preventing measles is efficient, within its limitations, and harmless. In families exposed to measles, the use of the blood or serum of adults who have had measles is open to practitioners generally. The last chapter is devoted to active immunization against measles and gives a full account of the various experiments in this line. The bibliography is quite complete; the literature in English and German is reviewed fully. A subject index is not given; there is simply a list of the chapters. It is a pleasure to state that the authors present an admirably clear and reliable account of the dangers from measles and of the principles and methods of prevention by means of human serum.

HISTORY TAKING AND RECORDING. By James A. Corscaden, M.D., Associate in Obstetrics and Gynecology, Columbia University, New York. Cloth. Price, $1.50. Pp. 78. New York: Paul B. Hoeber, Inc., 1926.

This neat, well written and concise book was prepared by a man interested in obstetrics and gynecology. This may appear strange; for while most persons admit the necessity of a complete history for medical and general surgical cases and a more or less detailed history for gynecologic patients, few see the usefulness of a complete history for obstetric patients. Even the author himself, who is both a gynecologist and an obstetrician, states in the introduction that the list he gives was designed originally for the history taker in a gynecologic clinic, but he does not mention the obstetric clinic. Without doubt, however, a fair number of complications in obstetrics would be avoided if obstetricians knew

more about the history of their patients. The author explains that the object of taking and recording a history is, first, to diagnose disease; secondly, to discover symptoms demanding relief, and, thirdly, to obtain data useful for subsequent visits of the patient and for research. The book is divided into two parts. In the first part information is given concerning the taking and recording of histories and a discussion on what the author considers the most important part of the subject—symptoms. In the second part a complete list of symptoms is classified, first according to regions of the body and diseases commonly located in these regions, and secondly, according to the systems to which the sensations are referred by the patient. Throughout the book emphasis is properly laid on the mind of the patient, because in history taking the mental status and the personality of the patient are becoming more and more important. The book will prove of the utmost benefit not only to medical students, general practitioners and specialists but also to nurses and lay persons who may have the task of taking and recording histories. The value of the book is further enhanced by the fact that it is small enough to be carried in a coat pocket.

BAKTERIOLOGIE INSBESONDERE BAKTERIOLOGISCHE DIAGNOSTIK. Von Prof. Dr. K. B. Lehmann und Prof. Dr. R. O. Neumann. 1. Band: Technik, allgemeine Diagnostik, Atlas. Lehmann's medizinische Handatlanten, Band X/1. Seventh edition. Cloth. Price, 20 marks. Pp. 172, with illustrations. Munich: J. F. Lehmann, 1926.

This does not depart materially from preceding editions. Much attention has evidently been paid to bringing descriptions up to date, and the fact that the book has held its place so long probably indicates that it still serves a useful purpose. It is unfortunate that the attempts at color reproduction of bacterial cultures are not more successful in reproducing the actual appearance of the growth. Some of the figures of colony form, on the other hand, are exceedingly good and should be helpful in differentiation. In succeeding editions it will doubtless be found necessary to picture the "rough" and "smooth" colonies of certain strains.

MEDICAL LABORATORY METHODS AND TESTS. By Herbert French, M.A., M.D., F.R.C.P., Physician, Guy's Hospital, and Tallent Nuthall, M.D., Medical Assistant, Guy's Hospital. Fourth edition. Cloth. Price, $2.50. Pp. 246, with 62 illustrations. Chicago: Chicago Medical Book Company, 1926.

This laboratory manual is intended for the convenience of physicians and students who do not have a fully equipped laboratory. It can be carried in a coat pocket. It is very complete, however. The chapters on the examination of the urine and the examination of the blood each cover about seventy pages; fewer pages are devoted to chapters on the examination of pus, gastric contents, feces, skin, cerebrospinal fluid, and the staining of tissue specimens. There are many black and white drawings, and several colored prints. The discussions are necessarily brief and to the point. There is a discussion of the Wassermann test, for example, but the technic is not given on account of its length for a book of this kind. It might at first appear inconsistent to include Lange's colloidal gold test. However, the most difficult part of this test, the preparation of the colloidal solution, has been omitted. The author states that a stable colloidal solution of gold is now on the market and can be obtained commercially. This edition contains numerous laboratory methods which were not in previous editions.

HANDBUCH DER PRAKTISCHEN UND WISSENSCHAFTLICHEN PHARMAZIE. Lieferung 16. Band VI. Herausgegeben von Geh. Reg.-Rat Professor Dr. Hermann Thoms, Direktor des pharmazeutischen Institutes der Universität Berlin. Paper. Price, 10 marks. Pp. 240. Berlin: Urban & Schwarzenberg, 1926.

This is the first instalment of the sixth volume of a large system (in German) devoted to the pharmaceutic sciences. It deals with the materia medica from the pharmaceutic standpoint, giving, in connection with each article, the composition, mode of preparation, physical and chemical characteristics, tests for purity and identity, and uses and dosage. The subjects are arranged in alphabetical order; and the thoroughness with which the topic is covered may be gathered from the fact that this instalment of 240 octavo pages does not complete the letter A.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

SELF-CARE FOR THE DIABETIC: For the Use of Diabetic Patients. By J. J. Conybeare, M.C., M.D., F.R.C.P., Assistant Physician to Guy's Hospital. Cloth. Price, $1.15. Pp. 70. New York: Oxford University Press, 1926.

Another handbook not markedly superior to the dozen others heretofore available.

MEDICAL USES OF RADIUM: Summary of Reports from Research Centers for 1925. Medical Research Council. Special Report Series, No. 112. Paper. Price, 1s. 3d. net. Pp. 34. London: His Majesty's Stationery Office, 1926.

Summary of British results with reference primarily to use of radium in cancer.

INFANT MORTALITY AND ITS CAUSES: With an Appendix on the Trend of Maternal Mortality Rates in the United States. By Robert Morse Woodbury, Ph.D. Cloth. Price, $3.50. Pp. 204. Baltimore: Williams & Wilkins Company, 1926.

A collection of papers covering special studies of these public health problems.

THE TIRED CHILD. By Max Seham, M.D., Assistant Professor of Pediatrics, University of Minnesota, and Grete Seham, Ph.D. Cloth. Price, $2. Pp. 342, with 20 illustrations. Philadelphia: J. B. Lippincott Company, 1926.

Complete consideration of child habits and care with special reference to fatigue.

ATLAS OF THE HISTORY OF MEDICINE—ANATOMY. By Dr. J. G. de Lint, Lecturer on the History of Medicine at the University at Leiden. With a foreword by Charles Singer. Cloth. Price, $6. Pp. 96, with 199 illustrations. New York: Paul B. Hoeber, 1926.

Excellent reproductions of illustrations related to the history of anatomy.

KÖRPER UND ARBEIT: Handbuch der Arbeitsphysiologie. Herausgegeben von Prof. Dr. Edgar Atzler, Direktor des Kaiser-Wilhelm-Instituts für Arbeitsphysiologie, Berlin. Paper. Price, 42.50 marks. Pp. 770, with 102 illustrations. Leipsic: Georg Thieme, 1927.

Systematic study of body structure in its relation to work and fatigue.

DIE PERIPHERISCHEN LÄHMUNGEN: Diagnostik, Untersuchungstechnik, Prognostik und Therapie. Von Prof. Dr. Toby Cohn. Paper. Price, 18 marks. Pp. 320, with 64 illustrations. Berlin: Urban & Schwarzenberg, 1927.

Monograph on peripheral nerve injuries.

GOOD LOOKS: Proper Care of the Skin and Hair, with Remarks on Body Grooming for Everyday People. By Irwin C. Sutton, M.D. Cloth. Price, $2.50. Pp. 100, with illustrations. Hollywood, 1926.

Outline of methods used in a district where cosmetic appearance means a livelihood.

DOC: FACTS, FABLES AND FOIBLES. By John A. Dillon, M.D. Cloth. Price, $2. Pp. 168. Boston: Richard G. Badger, 1926.

Collection of the stories by Renig Ade in the *Kansas Medical Journal*—the "You Know Me, Al" of medical humor.

GENIUS, SOME REVALUATIONS. By Arthur C. Jacobson. Cloth. Price, $2.50. Pp. 160. New York: Greenberg, 1926.

Essays on the relationships of drugs, drink and disease to genius.

DIAGNOSTIK INNERER KRANKHEITEN IN TABELLENFORM. Von Dr. med. A. J. Cemach. Fifth edition. Paper. Price, 7 marks. With 65 tables and 60 illustrations. Munich: J. F. Lehmanns, 1926.

Tables for differential diagnosis in internal medicine.

TWIN BIRTHS AND TWINS FROM A HEREDITARY POINT OF VIEW. Inaugural dissertation. By Gunnar Dahlberg, Lic. Med., Östg. Paper. Pp. 85, with illustrations. Uppsala: Kungl. Universitetets, 1926.

Anthropologic study with a review of various theories.

UEBER FORTSCHRITTE IN DER BEHANDLUNG DES KREBSES. Von Erich Opitz, K. Vorlaender, und H. Jung. Paper. Price, 2 marks. Pp. 60, with 20 illustrations. Munich: J. F. Lehmanns, 1926.

Advance of knowledge in the treatment of cancer.

Medicolegal

Valid Law for Revoking Licenses of Drugless Healers

(State ex rel. Hagen v. Superior Court (Wash.), 247 Pac. R. 942)

The Supreme Court of Washington, in quashing the alternative writ and denying a peremptory writ to review the judgment of the superior court of Thurston County sustaining the action of the director of licenses in revoking the relator's license to practice drugless therapeutics, says that it cannot concede that the Washington act of 1925, providing for the revocation of licenses to practice drugless healing in certain cases, is void. A reading of the entire act makes it clear that the legislature intended only to authorize the director of licenses to revoke licenses obtained in violation of the provisions of the act of 1919, not licenses lawfully obtained thereunder. So interpreted, it is not violative of any constitutional provision.

The statute provides that whenever it shall come to the attention of the director of licenses that an applicant for a license to practice drugless healing presented with his application a diploma purporting to have been issued to the applicant, on which the license was granted wholly or in part, and the director has reasonable ground to believe that the drugless school issuing the diploma has issued diplomas to persons not having the necessary educational requirements, he may enter an order to that effect, and cause the licentiate to be brought before him by serving a copy of the order on the licentiate. It is not required that the notice shall be styled "the state of Washington," and this court cannot think that the constitutional provision that all process shall be so styled has application to proceedings of this sort.

Nor does this court agree with the contention that the act is unconstitutional on the ground that it compels a licentiate to testify against himself in a proceeding criminal in its nature. Aside from the fact that this court cannot concede that this is a criminal proceeding, the statute nowhere provides that the licentiate shall testify to matters tending to incriminate himself. In this proceeding, as in all others, the licentiate may claim his privilege, and can rightfully refuse to answer any question when his answer might tend to his incrimination. The statute, it is true, provides that, if the licentiate shall fail or refuse to comply "in any particular" with the order of the director, the director shall have power to revoke his license. But this does not render the statute obnoxious for the reason contended. It only fixes the degree of evidence on which the director is empowered to act. It does not compel the licentiate to give incriminating evidence against himself.

The constitutional provision relating to ex post facto laws applies only to legislation concerning crimes. It does not apply to a proceeding to revoke a license to practice drugless healing obtained in violation of the statute authorizing the issuance of such licenses.

Failure to Procure Timely Treatment for Injury

(City of Duncan v. Nicholson (Okla.), 247 Pac. R. 979)

The Supreme Court of Oklahoma, in affirming a judgment for $1,866 damages in favor of plaintiff Nicholson, says that she stepped into a hole in a sidewalk in the defendant city, causing her to fall on her right hand and arm, breaking it. At first she thought that her hand and arm were sprained, and not until about twenty or twenty-five days after the injury, when she consulted a physician, did she learn that there was a fracture. At that time the bones had begun to knit, and the physician advised her that it would be necessary for the bones to be rebroken and set, and that this could not be done without administering an anesthetic. The plaintiff insisted that she could not take an anesthetic, and treatment was never given the injured arm and hand. She asked for $3,000 damages for permanent injuries to her hand and arm, and $3,000 for pain and suffering, whereas the defendant contended that the permanent injury was caused by her own primary negligence in failing and refusing to procure medical and surgical treatment, and that it was not liable therefor. It is true that one who is personally injured and fails to use ordinary care, after having knowledge of the injury, in procuring timely medical or surgical treatment and, by reason of such failure, his condition is rendered worse than it would have been if he had used such ordinary care, cannot recover the increased damages resulting from such failure, but is entitled to recover only such damages as he would have sustained had he not been guilty of negligence in failing to obtain medical or surgical treatment. Still, the supreme court holds that the verdict of the jury in this case was authorized under this rule. It was impossible to tell from the record whether the jury took into consideration the permanent injury of the plaintiff. The verdict was a general one and for much less than the plaintiff would have been entitled to recover for a permanent injury resulting in the loss of her earning capacity. The amount of the verdict would indicate that the jury merely took into consideration the pain and suffering experienced by the plaintiff up to the time she was advised by her physician that the bones would have to be rebroken and set, and the pain and suffering incident to the rebreaking of the bones and their knitting, and the expense thereof, together with the loss of time. The trial judge instructed the jury that the plaintiff could not recover for any loss of earning, or for any pain or suffering caused by her own neglect in failing to give the injured arm proper medical and surgical attention; that her recovery, in any event that the jury said she should recover, would be limited to the loss of earning and pain and suffering that would have resulted had she used due care in giving herself proper medical and surgical attention, together with the expense of such medical and surgical attention, if it had been given. The supreme court must indulge the presumption that the jury followed this instruction and rendered its verdict in keeping therewith. Under the evidence produced, the verdict was justified in the light of such instruction.

Death After Arteriosclerosis, Accident, Gangrene

(United States Casualty Co. v. Thrush (Ohio), 152 N. E. R. 796)

The Court of Appeals of Ohio, in affirming a judgment for plaintiff Thrush on an accident insurance policy, says that by the terms of the policy the company assumed liability for the injury or death of her husband resulting "directly and independently of any and all other causes, from bodily injury effected solely by external violence and accidental means"; and it was also provided that the policy did not cover "any accidental injury caused or contributed to directly or indirectly by sickness or disease." There was evidence tending to show that the insured in going up a stairway stubbed his toe, complained almost immediately of pain, and limped. Inflammation in the toe ensued, and the pain increased. A physician was called and subsequently attended him. Gangrene set in, and eight days after the accident the limb was amputated. The gangrene reappeared, and the insured died about three weeks and a half after the accident. A necropsy held about two weeks after his death disclosed the presence of arteriosclerosis, as to the extent of which the physicians differed in opinion.

Many cases have been decided in the federal and state courts involving questions similar to those under consideration here. The cases are in direct conflict, some courts, in similar cases, holding that the disease is a contributing cause, and others holding that the accident is the exclusive cause. It would be a waste of time and energy to attempt to classify or analyze these cases. It is, in this court's judgment, more profitable to decide the case on principle, and to ascertain and establish a sound and reasonable rule of construction, in view of the facts disclosed by the evidence.

The court must consider the circumstances surrounding the issuing of the policy in question as a key to the reasonable construction of the terms and conditions. The policy in this case was originally issued to the insured when he was 60 years of age, and continued in force up to the time of the accident, when he was 63 years of age. This court thinks it fair to assume, from the testimony in the case as well as from judicial knowledge, that a certain amount of sclerosis is usually found in a person of 60 years of age. To hold that the insurance company, by the issuance of its policy,

intended to adopt the view that the policy would not be valid where natural diseases, especially of old age, make serious results more probable from accidents, would be an unfair and unreasonable construction. The company intended a reasonable scope of insurance, and this could be accomplished by holding the company liable for accidents which, operating on the physical system according to the natural and usual conditions of age, produce serious illness or death. The sclerosis was not the cause of death. The accident caused the gangrene, and the gangrene caused death; therefore the accident was the causa causans (causing cause). Giving the policy a reasonable interpretation in favor of the assured, the jury had a right to find that the accident was the sole cause of the death.

In denying an application for a rehearing, the court says that, so far as the diabetes proposition was concerned, there was a conflict of the evidence, one physician testifying that the condition in that respect found in the necropsy might have been caused, or at least greatly intensified, by the sickness and suffering of the insured prior to his death, so that it was a question of fact whether the insured was suffering from diabetes to any considerable extent at the time of the accident. This physician testified that the gangrenous condition might be the natural result of the accident. He also testified that in his opinion there was nothing in the condition of the arteries of the insured that would prevent his living a number of years. Another physician testified that, notwithstanding the sclerosis, the insured might have lived for ten years. Taking the testimony of both physicians, it was a fair inference that the arterial condition was not such as to have been the cause, or even a contributing cause, of the death of the insured at the time the death actually occurred.

Motion to certify record overruled by the Supreme Court of Ohio.

Evidence of Violation of Medical Practice Act

(People v. Banks (Mich.), 209 N. W. R. 935)

The Supreme Court of Michigan, in affirming a conviction of the defendant on a charge of practicing medicine without having a certificate of registration and license, as required by act 237, public acts of 1899, as amended, says that the proofs disclosed that in front of the house in which he lived there was a large sign on which was painted the word "Banks"; that in the house was a room designated by sign "Waiting Room," from which a door led into another room, designated "Office"; that in this room the defendant conferred with people who called on him, and in it were a number of little tables with bottles, similar to bottles of medicine, and others which he said contained growths removed from "patients he had cured." One Roy French and his brother went to the defendant's office. Roy told him that he was suffering with "tuberculosis of the bone"; that he had had an operation on his hip, and that there was a hole in it. The defendant told them that he could cure that. He said that his medicine would soak down into the holes in that bone and drive the poison out of his system; that patients that he got were mostly persons who had been to physicians, and the physicians could not cure them; so he got lots of patients that way. Roy purchased from him a bottle which he said was "cancer medicine," for which he paid him $25. An analysis showed that it contained in part zinc sulphate and hydrochloric acid. The defendant also sold Roy a bottle of what was called "Five in One," another called "New Discovery," and some "Stump Puller Salve." Roy paid $28 in all. The defendant gave oral directions for the use of the medicines, but afterward sent some written ones. About three weeks later the brother again visited the defendant, and asked him to go to see Roy, whose "face was awful black," $5 being paid the defendant for "gas and cylinder oil he claimed." Roy then got two more boxes of salve, for which he paid $4. The defendant made two trips to Roy's home, expressed satisfaction with his condition, and showed how to steam the face better and how to apply the salve.

It was insisted that the defendant did not make a diagnosis, and that the selling of medicine was not engaging in the practice of medicine within the inhibition of the statute. Evidence was not presented to show that the defendant called himself a physician or held himself out to the public as such. It was true also that he did not examine Roy. He simply took his word for the nature of his affliction, but he did undertake to treat the ailment with which he was suffering, and sold him medicine and sent him by mail specific instructions as to the manner in which his remedies should be applied. Many physicians at times prescribe medicines for patients, relying on their statements as to the nature of their ailments and without making a diagnosis. The charge for the bottle of medicine was out of proportion to its value as such. It is apparent that it included a fee for the defendant for the service rendered by him in prescribing it. The language in section 9 of the statute, defining the term "practice of medicine," must be considered in the light of the exceptions stated in section 8. This court is not called on to state the particular acts that will constitute a violation of the statute. That which the defendant did warranted the submission of the case to the jury and justified the verdict rendered.

While the defendant could not be prosecuted in Ingham County for that which he did while at Roy's home in another county, the court thinks that this evidence was admissible as characterizing the business in which he was engaged in Ingham County. Its tendency was to prove that he was not simply selling medicines, but professed to treat and cure human ailments. Then, too, the testimony of the chemist who analyzed some of the medicine called "Cancer Cure" was admissible. It established the fact that the defendant furnished drugs to the young man to effect a cure of his ailment.

A photograph of Roy before taking the medicine was received in evidence over the defendant's objection. The prosecution having failed to show that the condition of his face on the trial was due to the effect of the medicine, the court instructed the jury that they must be careful not to permit themselves to be affected in any degree whatever because of Roy's changed appearance. The testimony disclosed that his changed appearance was described by his brother to the defendant, and that the defendant said, in effect, that it was just as he expected it would be. The supreme court thinks that the jury would have had a right to infer from the proofs that it was due to the effect of the medicine. But, if it was error in admitting the photograph, it was cured by the explicit direction of the court to the jury that they must disregard it.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Montgomery, April 19-22. Dr. D. L. Cannon, 519 Dexter Ave., Montgomery, Assistant Secretary.

American Association of Anatomists, Nashville, Tenn., April 14-16. Dr. L. H. Weed, Johns Hopkins Medical School, Baltimore, Secretary.

American Association of Pathologists and Bacteriologists, Rochester, N. Y., April 15-16. Dr. H. T. Karsner, School of Medicine, Western Reserve University, Cleveland, Secretary.

American Pharmacological Society, Rochester, N. Y., April 14-17. Dr. E. D. Brown, University of Minnesota, Minneapolis, Secretary.

American Physiological Society, Rochester, N. Y., April 14-16. Dr. W. J. Meek, University of Wisconsin, Madison, Secretary.

American Society for Experimental Pathology, Rochester, N. Y., April 14-16. Dr. E. B. Krumbhaar, Philadelphia General Hospital, Philadelphia, Secretary.

American Society of Biological Chemistry, Rochester, N. Y., April 14-16. Dr. F. C. Koch, University of Chicago, Chicago, Secretary.

Arizona State Medical Association, Yuma, April 21-23. Dr. D. F. Harbridge, Goodrich Building, Phoenix, Secretary.

California Medical Association, Los Angeles, April 25-28. Dr. Emma W. Pope, 593 Market Street, San Francisco, Secretary.

Federation of American Societies for Experimental Biology, Rochester, N. Y., April 14-16. Dr. F. C. Koch, University of Chicago, Chicago, Secretary.

Florida Medical Association, West Palm Beach, April 5-6. Dr. Shaler Richardson, 111 W. Adams Street, Jacksonville, Secretary.

Louisiana State Medical Society, New Orleans, April 26-28. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.

North Carolina, Medical Society of the State of, Durham, April 18-21. Dr. L. B. McBrayer, Southern Pines, Secretary.

South Carolina Medical Association, Anderson, April 19-21. Dr. E. A. Hines, Seneca, Secretary.

Tennessee State Medical Association, Chattanooga, April 12-14. Dr. J. F. Gallagher, 810 Bennie-Dillon Building, Nashville, Secretary.

Texas, State Medical Association of, El Paso, April 26-28. Dr. Holman Taylor, 207½ West 11th Street, Fort Worth, Secretary.

Western Physiotherapy Association, Kansas City, Mo., April 8-9. Dr. Charles Wood Fassett, 115 East Thirty-First Street, Kansas City, Mo., Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Gynecology, St. Louis

12: 781-928 (Dec.) 1926

*How Pathology of Fibroid Tumors of Uterus Will Determine Selection of Radium or Operation in Their Treatment. J. O. Polak, New York.—p. 781.
*Postmortem Findings in Ten Cases of Toxemia of Pregnancy. J. W. Bell, Everett, Wash.—p. 792.
*Ureteral Obstruction in Women. G. M. Laws, Philadelphia.—p. 802.
*Intra-Uterine Death of Fetus Due to Abnormalities of Umbilical Cord. E. L. King, New Orleans.—p. 812.
*Maternal and Infant Mortality in 4,488 Cases in Outdoor Clinic. H. Bailey, New York.—p. 817.
Periodicity of Sex Desire: I. Unmarried Women, College Graduates. K. B. Davis, New York.—p. 824.
*Effect of Treatment of Syphilitic Pregnant Women on Incidence of Congenital Syphilis. D. L. Belding, Boston.—p. 839.
*Placental Transmission: IV. Protein Fractions in Fetal and Maternal Plasma. E. D. Plass and C. W. Matthew, Detroit.—p. 847.
Preventive Aspects of Postpartal Care. C. J. Miller, New Orleans.—p. 856.
Curettage of Uterus. H. E. Miller, New Orleans.—p. 860.
Value of Glucose and Insulin to Obstetrician and Gynecologist. W. E. Levy, New Orleans.—p. 866.
Intracranial Hemorrhage of New-Born. J. F. Dicks, New Orleans.—p. 871.
*Voorhees Bag in Induction of Labor. A. L. Madden, Albany, N. Y.—p. 875.
*Gastric Juice During Pregnancy. F. Arzt, St. Louis.—p. 879.
*Referred Pain in Shoulder in Ruptured Tubal Pregnancy. W. C. Danforth, Evanston, Ill.—p. 883.
*Case of Acrania Causing Malpresentation and Accidental Hemorrhage. A. J. Fleischer, New York.—p. 885.
*Case of Congenital Malformation and Arrested Development of Colon. G. K. Sims, Joplin, Mo., and H. L. Meyers, Chicago.—p. 887.
*Spirochetes in Thymus Gland. J. R. McCord, Atlanta, Ga.—p. 890.

Treatment of Fibroid Tumors of Uterus.—Before subjecting any woman to roentgen-ray or radium therapy, Polak insists that she be examined under anesthesia to determine the exact relation and location of the tumor mass or masses, and a diagnostic curettage be made to exclude a malignant growth. All scrapings should be submitted to a pathologist. The following types of tumors demand operation: (1) tumors larger than a three months' pregnancy; (2) rapidly growing tumors which suggest progressive changes; (3) tumors producing pressure symptoms; (4) tumors associated with pelvic pain; (5) pedunculated tumors, in which radium only increases the necrosis; (6) tumors with a pathologic condition of the adnexa; (7) tumors with associated secondary anemia (cachectic appearance), in which the uterine hemorrhage has not been sufficient to account for the degree of anemia; (8) tumors in young women, and (9) multiple submucous tumors distorting the uterine cavity (radium in these cases is likely to produce pyometra). Finally, there should be operation in cases in which the tumor mass cannot be differentiated definitely, and in women who fear radium. All of these cases require either myomectomy or hysterectomy.

Postmortem Pathology of Toxemia of Pregnancy.—In the ten cases reported on by Bell there is little agreement in the liver lesions, which include passive congestion, localized fatty infiltration, acute yellow atrophy, infarction, hemorrhagic necrosis and cellular infiltration (chiefly of portal spaces). These data weaken the belief in any one lesion of the liver being considered essential for toxemia of pregnancy.

Ureteral Obstruction in Women.—The fifty cases analyzed by Laws show that there are various types of ureteral obstruction in women that are more frequent than ureteral calculus. Fifteen cases were of the latter type. They are found associated with dilatation of the ureter and hydronephrosis or "back pressure" effects on the renal parenchyma. When these symptoms exist and calculus is not demonstrable, examination is usually indicated to determine the normal patency of the ureter. Their symptoms are essentially similar to those produced by stone. The bulbed catheter is the best instrument for this purpose, and for routine use it should be at least 10 mm. in circumference. Gentle, gradual dilation is the treament of choice for ureteral stenosis.

Abnormalities of Umbilical Cord.—In one of King's cases, the whole cord was twisted. It contained only one artery and one vein. In two other cases the cord was constricted, probably as the result of an obliterative inflammation of the vessels of the cord.

Maternal and Infant Mortality in Berwind Clinic.—Bailey analyzes 4,488 deliveries done in the John E. Berwind Maternity Clinic under the direction of the Cornell University Medical College. The infant death rate was 5.2 per cent. There were 157 stillbirths (3.5 per cent), and seventy-seven neonatal deaths (17 per cent). Fourteen mothers died. Two of these deaths were not obstetric deaths. One was a death from meningitis and one from heart disease. There were only seven delivery deaths, or one in 641 cases (1.56 per thousand births). Only one of these deaths was due to sepsis. Bailey stresses the point that with close control and adequate facilities, a teaching service can be conducted with a considerably lower death rate than that generally prevalent in the community. In these cases there is a reduction of 50 per cent below the figures for New York State. The stillbirth and neonatal death rate of 5.2 per cent is more than 30 per cent lower than the figures for New York City.

Treatment of Syphilitic Pregnant Women.—A survey made by Belding of the children of untreated women who had a positive Wassermann reaction during pregnancy indicated that the majority of these children did not show any evidence of early congenital syphilis. In 150 serum positive women who were not treated during pregnancy, 61.3 per cent of the conceptions resulted in living, apparently nonsyphilitic children; of eighty-seven women who in addition showed evidence of clinical syphilis, 42.4 per cent gave birth to such children; and of sixty-three who had only serum positive syphilis, 87.4 per cent bore living apparently nonsyphilitic children. Women who did not show any clinical evidence of syphilis and who had had the disease more than five years seldom gave birth to a syphilitic child. A group of forty women who resembled most closely the eighty-seven untreated women with clinical syphilis in respect to the previous effect of the disease received antisyphilitic treatment during the gestation period. Living, apparently nonsyphilitic children resulted in 67.5 per cent of the conceptions. The most striking evidence of the effect of treatment was the lowering of the fetal death rate.

Protein Fractions in Fetal and Maternal Plasma.—Plass and Matthew found that fetal plasma is relatively protein poor as compared with maternal plasma, all the protein fractions being maintained in higher concentrations in the latter. In spite of these absolute differences, the relative proportions of serum-albumin and serum-globulin are maintained very nearly as in normal nonpregnant women. The fibrin, on the other hand, is both absolutely and relatively increased in the maternal plasma.

Voorhees Bag in Induction of Labor.—Madden regards the Voorhees bag as inadequate as an agency for the induction of labor. He states that in cases in which it may be employed successfully it is often unnecessary; expectancy is as certain and more logical. When necessary, the bag merely precedes manual dilation, and its use must be recognized as being strictly limited to the production of a dilatable cervix.

Gastric Juice During Pregnancy.—Arzt asserts that the free hydrochloric acid and total acid of the stomach contents are lower in pregnancy than in the nonpregnant state, and that this deficiency is more marked early, at the time that nausea and vomiting are most common. Dilute hydrochloric acid by mouth is indicated in preventing early nausea and vomiting of pregnancy in certain cases.

Shoulder Pain in Ruptured Tubal Pregnancy.—Danforth has noted the presence of shoulder pain in ruptured ectopic

pregnancy in two cases, and regards it as having diagnostic value.

Acrania, with Other Anomalies.—In Fleischer's case, the dome of the calvarium was missing. The brain was included in a meningocele that extruded from the opening in the skull. From the apex of this meningocele, there extended a fold of membrane to the amnion reflected from the root of the cord at its insertion in the placenta. This insertion was eccentrically placed, practically at the outer margin of the placental circumference. The maternal side of the placenta, corresponding to the fetal side where the cord was inserted, indicated that separation had taken place at this point, which was the seat of hemorrhage. The brain of the fetus was unusually well developed, considering the fact that in this type of monstrosity, this is not usually the case. There was marked exophthalmos of the right eye, and also double harelip and cleft palate. Syndactylism was present in both lower and upper extremities. The thymus was large, as one would expect in a new-born child. The heart was normal; the lungs were atalectatic. Examination of the abdominal and pelvic organs did not reveal abnormalities. It would appear that with every uterine contraction, traction on the adherent amnion and placenta resulted in premature separation, with consequent accidental hemorrhage. For the same reason, there was countertraction on the head, preventing flexion, with resulting extension and face presentation.

Congenital Malformation of Colon.—In the case cited by Sims and Meyers, a white, firm, cordlike structure, about 5 cm. in diameter, without a palpable lumen, was found beginning at the ileocecal junction, passing upward and diagonally across the abdomen just below the umbilicus to the left costal arch, then down to the crest of the ilium of the same side. From here, this structure, which proved to be the colon, though it did not have a vestige of a mesentery in any of its entire length, passed downward to the midline and in this plane into the pelvis. It was not only impossible to pass meconium through the ileocecal valve, but even gas from the distended ileum could not be forced through. Postmortem examination did not reveal any other abnormality.

Spirochetes in Thymus.—The only evidence of syphilis found by McCord in his case was the presence of spirochetes in large numbers in the thymus. All other tissues and organs were free from these organisms, and the placenta showed none of the histologic evidences of syphilis. A roentgenogram of the bones of the baby did not show any of the changes that are believed to be characteristic of syphilis. A dark field examination of liver secretion did not show the spirochetes of syphilis.

American Journal of Psychiatry, Baltimore

6: 205-412 (Oct.) 1926

*Types of Therapeutic Response Observed in Malaria Treatment of General Paralysis. G. H. Kirby and H. A. Bunker, Jr., New York. —p. 205.
Environmental Factors in Behavior of Children. L. G. Lowrey, Cleveland.—p. 227.
Two Cases Illustrating Combination of Affective and Schizophrenic Symptoms. C. M. Campbell, Cambridge, Mass.—p. 243.
Dynamic Interpretation of Kretschmer's Character Types. I. H. Coriat, Boston.—p. 259.
Defects in Zone of Language (Word-Deafness and Word-Blindness) and Their Influence in Education and Behavior. E. B. McCready, Pittsburgh.—p. 267.
Systematic Music Program for Mental Hospitals. W. van de Wall, Harrisburg, Pa.—p. 279.
Museum of Formal and Verbal Expressions of Insane at Yankton State Hospital. L. Kanner, Yankton, S. D.—p. 293.
Medical Profession from International Point of View. G. E. Vincent, New York.—p. 297.

Malaria Treatment of General Paralysis.—The therapeutic results obtained in 106 cases of general paralysis in which the malaria treatment was applied are presented by Kirby and Bunker. Twenty-two of the patients died during the course of the malaria, from one to six weeks after the final paroxysm or from two to eleven months after malaria. Twenty-six were unimproved and eight were slightly improved; thirteen had moderate remissions and thirty-seven had full remissions. Of ninety-three cases considered in the final analysis, the treatment has apparently been without any effect whatever in thirteen; in fifteen, the results attributable to treatment have been of a more or less temporary character; in sixty-five, the therapeutic influence, whatever its degree, has persisted essentially unmodified up to the present time. Patients of the "manic" type of general paralysis exhibited by far the greatest tendency to a favorable response to treatment. Among the clinical factors that seem to play a part in the results obtained by the malaria treatment, the so-called clinical type of general paralysis appears to rank first in importance, the behavior of the body weight subsequent to treatment second, and the duration of the symptoms prior to treatment third.

American Journal of Public Health, Albany, N. Y.

16: 1177-1272 (Dec.) 1926

*Nutritional Value of Oysters and Other Sea Food. D. B. Jones, Washington, D. C.—p. 1177.
Medical Consultant in Industry and His Value to State. R. S. McBirney, New York.—p. 1182.
Industrial Hygiene Abroad and Hygienic Exposition at Düsseldorf. G. M. Price, New York.—p. 1202.
Preparation and Testing of Diphtheria Toxoid (Anatoxine-Ramon). P. J. Moloney, Toronto, Ont.—p. 1208.
*Mosquito Work Throughout World. L. O. Howard, Washington, D. C. —p. 1210.
Statistical Survey of Sanitary Conditions in Cuba. J. E. Lopez-Silvero, Havana, Cuba.—p. 1214.
Antipneumococcic Serums: Purification and Concentration. F. M. Huntoon, Glenolden, Pa.—p. 1247.
Preparing Bile Medium to Facilitate Taking and Mailing of Typhoid Blood Cultures. R. V. Stone, Los Angeles.—p. 1249.

Nutritional Value of Sea Food.—The results of Jones' experiments show that, judged from the criterion of growth promotion, the proteins of clams, shrimp and oysters compare favorably with the proteins of other articles that are highly regarded for their nutritive value.

Control of Mosquitoes.—The following points are emphasized by Howard: The control of all species of mosquitoes is sanitary work and should be promoted in every way by sanitary authorities. In all control work in which more than one species of mosquito is involved, engineers and the health people should cooperate closely with the entomologists, since there is so great a variation in the life habits and breeding places of the different species. In most localities, mosquito annoyance and mosquito-borne disease are unnecessary and can be controlled. Their continued existence is a blot on the fair page of modern civilization.

American Journal of Roentgenology and Radium Therapy, New York

16: 507-615 (Dec.) 1926

*Development of Filtered Radon Implants. G. Failla, New York.—p. 507.
*Etiology of Cancer: Work of Guy. M. J. Sittenfield, New York. —p. 525.
*Effect of Irradiation on Generative Organs and Offspring. H. J. Bagg, New York.—p. 529.
Effects of Unfiltered and Filtered Radon Tubes Buried in Rabbit Muscle. M. Cutler, New York.—p. 535.
*Roentgenologic Diagnosis of Pulmonary Tuberculosis. F. S. Bissell, Minneapolis.—p. 544.
Resolution in Pneumonic Consolidations. R. G. Allison, Minneapolis. —p. 549.
*Diseases of Chest Demonstrated by Lipiodol. A. H. Pirie, Montreal. —p. 553.
*Measurement of Liver by Means of Roentgen Rays. G. E. Pfahler, Philadelphia.—p. 558.
*Metastasis in Carcinoma of Prostate. J. Sproull, Haverhill, Mass. —p. 565.

Radon in Gold Tubes.—Failla presents a method for the collection of radon in fine gold tubes of 0.1 mm. internal diameter, and reports the results of experiments undertaken for the purpose of determining approximately the dosage that should be used when gold implants are substituted for bare tubes.

Etiology of Cancer.—Sittenfield presents an analysis of attempts made to cause the development of mouse sarcoma 37 by a cell-free filtrate, which is a partial confirmation of Gye's work. On the other hand, the interpretation of the adjustment of a nonspecific plus a specific factor has not been corroborated.

Effect of Irradiation on Ovum and Offspring.—Bagg believes that irradiation of the unfertilized ova or the spermatozoa may result either in completely destroying the functional activity of these cells, or so modifying their structure that the resulting offspring may be defective. In this regard, the evidence points to the likelihood of the death or absorption of injured germ cells, rather than their ability to compete with similar cells that have escaped injury. There is, however, experimental evidence indicating that in certain instances the germ cells may be modified by irradiation and actual hereditary abnormalities established. Irradiation of the fertilized ova, and irradiation during early pregnancy are likely to produce a marked arrest in development, with subsequent modification of structural expression. Irradiation during later pregnancy, while it may not produce visible changes in the offspring at birth, must cause one to look ahead to the future development of the child for disturbances in growth or loss of fertility.

Roentgenologic Diagnosis of Pulmonary Tuberculosis.—Bissell asserts that while the roentgen-ray diagnosis of pulmonary tuberculosis is not infallible, an experienced examiner will rarely be in error if he adheres strictly to definite and specific rules of interpretation.

Use of Iodized Oil in Diagnosis of Chest Conditions.—Indications given by Pirie for the use of iodized oil are: suspected bronchiectasis; suspected tuberculosis when tubercle bacilli cannot be found in sputum; after thoracoplasty, when the patient is not doing well; for demarcation of the diaphragm when the diaphragm is invisible in suspected subdiaphragmatic abscess; for exclusion of bronchiectasis before performing thoracoplasty; for localization of a known abscess; for stenosis; for demonstration of a tuberculous cavity; for bronchopleural fistula; for foreign bodies, and for the negative diagnosis of bronchiectasis.

Measuring Liver by Means of Roentgen Ray.—Pfahler contends that an accurate record of the size and position of the liver can and should be made as a routine in every abdominal examination.

Metastasis in Carcinoma of Prostate.—The early metastasis in Sproull's case was confined to the right half of the pelvis. The late metastases involved: (1) all the bones of the pelvis; (2) the heads and upper parts of shafts of the femurs; (3) all the bodies of the lumbar spine; (4) nearly all the ribs; (5) both clavicles; (6) both scapulae, and (7) the heads and upper halves of the shafts of both humeri. The dorsal spine showed uniform increase in density, which was suggestive but not absolutely characteristic of metastasis. Metastasis was not present in the lower extremities below the upper third of the shafts of the femurs. In the upper extremities, metastasis was not present below the junction of the middle and lower thirds of the shafts of the humeri. The bones of the cranium did not show evidence of metastasis.

American Review of Tuberculosis, Baltimore

14: 597-739 (Dec.) 1926

Cooperation of Science and Practice in Tuberculosis. T. Smith, Princeton, N. J.—p. 597.
*Tuberculosis Hospitalization in United States. G. J. Drolet, New York.—p. 600.
Follow-Up Information on 1,747 Tuberculosis Patients from One to Seven Years After Discharge from Sanatorium. R. G. Ferguson, Fort Qu'Appelle, Sask.—p. 625.
*Treatment of Tuberculous Lymphadenitis Among American Indians. R. J. Collins and G. L. Leslie, River Glade, N. B.—p. 646.
*Tuberculosis in Negroes. H. G. Carter, Burkeville, Va.—p. 653.
Variability of Localization of Tuberculosis in Organs of Different Animals: I. Quantitative Relations. H. J. Corper and M. B. Lurie, Denver.—p. 662.
Id.: II. Importance of Distribution of Tubercle Bacilli as Concerns Differences of Susceptibility of Organs. H. J. Corper and M. B. Lurie, Denver.—p. 680.
*Inhibitive Reaction of Tuberculosis Serum. D. Perla, Philadelphia.—p. 706.
*Inhibitive Reaction of Caulfeild: Clinical Value in Pulmonary Tuberculosis. D. Perla, Philadelphia.—p. 718.
*Kahn Test for Syphilis in Tuberculosis. G. C. Stucky, Lansing, Mich., and W. B. Huntley, Howell, Mich.—p. 724.

Tuberculosis Hospitalization in United States.—Drolet has made an extensive survey of the effect of tuberculosis hospitalization on the death rate from tuberculosis. He found a striking correlation in the figures between the tuberculosis death rate and the ratio of beds available. In the three countries with the lowest rates, below 100 per hundred thousand of population, namely, New Zealand, Canada and the United States, the highest ratio of beds available is from seven to nine for each ten deaths. In the intermediate group, in the order of their tuberculosis death rate, the Netherlands, England and Wales and Germany, the ratio of beds available is four or five for each ten deaths. In the nations with high tuberculosis death rates, Italy, France, Japan and Czechoslovakia, there is a diminishing or low ratio of beds available for the control of tuberculosis. Drolet does not believe that tuberculosis hospitalization is the only factor controlling the tuberculosis death rate. On the contrary, he feels that with it two other prominent factors play a great part: first, the factor of general living and working conditions; and, second, that of racial resistance (which he believes is a condition acquired mainly through contact with tuberculous infection, and in proportion perhaps to its frequency and duration either in an individual or his ancestors; in other words, previous tuberculization of the race or the group, the effects of which are transmissible). But, along with the influence of living and working conditions, and of previous tuberculization, it must be acknowledged that tuberculosis hospitalization would seem to be one of the outstanding factors throughout the world in the control of tuberculosis.

Treatment of Tuberculous Lymphadenitis.—Collins and Leslie have had very satisfactory results in the treatment of these cases by sun lamp and roentgen-ray therapy. Daily exposures to the alpine lamp, supplemented in summer by sun baths whenever possible, effect noticeable improvement in a very short time, and it is rare to see any progress of the condition after this treatment has been started. Exposures are graduated from three minutes the first day up to a maximum of thirty minutes, on both sides of the neck if necessary, the lamp being set at a distance of 30 inches (76 cm.). This daily exposure to the ultraviolet rays is supplemented by roentgen-ray therapy—one treatment a week, interrupted at certain intervals to lessen the danger of overexposure. The contents of lymph nodes that have proceeded to liquefaction are withdrawn through needles, when necessary, this procedure often forestalling further sinus formation, as the suppurative process usually improves rapidly with the other therapeutic measures.

Tuberculosis in Negro.—Carter has found tuberculosis in the negro a curable disease, although his resistance is not up to the standard of the white man's, and possibly will not be for many years. The light mulatto shows a much better resistance to the disease than the black negro, but even his resistance is not as high as that of the white man.

Inhibitive Reaction of Tuberculosis Serum.—The inhibitive reaction of tuberculosis serum is not regarded by Perla as being specific. It is dependent on an increase of the protective colloidal constituents in the serum. The inhibitive substance in serum may be demonstrated by using nonspecific alcoholic lipoidal solutions as antigens in place of an alcoholic extract of tubercle bacilli. The inhibitive substance in tuberculosis serum interferes with the fixation of complement in the tuberculo-complement fixation reaction.

Inhibitive Reaction of Caulfeild in Tuberculosis.—Perla applied the inhibitive reaction of Caulfeild in a considerable number of cases, and noted that it occurs almost as frequently in clinically nontuberculous patients who are suffering with other diseases, and in normal persons who are clinically nontuberculous, as in the tuberculous. The inhibitive reaction may be obtained in about 25 per cent of tuberculosis patients. The presence of a positive inhibitive test is accompanied by a negative or weakly positive complement-fixation reaction. The inhibitive substance prevents the interaction of small amounts of antigen with antibody, as well as preventing the interaction of anticomplementary amounts of antigen and complement. An inhibitive reaction may be obtained in about 15 per cent of syphilitic patients. In a certain number of syphilitic patients, the Wassermann reaction becomes negative in the presence of the inhibitive reaction. On the basis of these studies, the inhibitive test of Caulfeild does not appear to be a specific reaction for clinical tuberculosis.

Kahn Test for Syphilis in Tuberculosis.—An attempt was made by Stucky and Huntley to determine whether tuberculosis affects the specificity of the Kahn test for syphilis. It appears from the results obtained that the specificity of the Kahn reaction for syphilis is not affected by the presence of coincident tuberculous infection.

Annals of Otology, Rhinology and Laryngology, St. Louis

35: 969-1300 (Dec.) 1926

Case of Double Twist Without Stricture of Terminal Portion of Esophagus. H. P. Mosher, Boston.—p. 969.
Beads as Foreign Bodies in Bronchi. E. J. Patterson, Pittsburgh.—p. 989.
Foreign Bodies in Esophagus. L. H. Clerf, Philadelphia.—p. 1000.
Salivary Secretion. R. A. Barlow, Madison, Wis.—p. 1021.
Saccus Endolymphaticus: Relation to Labyrinthine Muscle Tonus. H. G. LaReau, Chicago.—p. 1032.
Laryngeal Tuberculosis. E. A. Looper, Baltimore.—p. 1041.
Interpretation of Speech Sounds by Means of Their Tactual Correlations. R. H. Gault, Washington, D. C.—p. 1050.
Chronic Focal Infection of Tonsils and Accessory Sinuses in Adults. J. Daland, Philadelphia.—p. 1064.
Tuberculosis of Middle Ear and Mastoid. F. R. Spencer, Boulder, Colo.—p. 1073.
How Deafened are Helping Otologist. G. Berry, Worcester, Mass.—p. 1082.
Frontal Sinus Disease: Three Cases. L. M. Hurd, New York.—p. 1093.
Nerve Deafness. F. P. Emerson, Boston.—p. 1098.
Membranous Laryngitis and Tracheobronchitis (Nondiphtheritic). T. R. Gittins, Sioux City, Iowa.—p. 1110.
Mastoid Disease. J. A. Morgan, Honolulu.—p. 1130.
Gunshot Wounds of Maxillary Sinus. H. F. Lampe, New York.—p. 1135.
Treatment of Lateral Pharyngeal Bands for Deafness by Roentgen Ray. D. C. Smyth, Boston.—p. 1157.
Influence of Negative Pressure in Sphenoid on Optic Nerve. L. E. White, Boston.—p. 1163.
Cerebrospinal Rhinorrhea. W. H. Johnston, Muscatine, Iowa.—p. 1205.
Biopsy in Suspicious (Carcinomatous) Growths of Larynx. C. J. Imperatori, New York.—p. 1241.
Primary Osteomyelitis of Mastoid Bone (Traumatic). M. E. Kahn, Chicago.—p. 1246.
Foreign Bodies in Accessory Nasal Sinuses. M. B. Wilson, Chicago.—p. 1259.

Archives of Surgery, Chicago

14: 1-164 (Jan.) 1927. Part I

*Mode of Origin of Gallbladder Lesions. J. Denton, New York.—p. 1.
*Pathogenesis of Biliary Calculi. S. H. Mentzer, Rochester, Minn.—p. 14.
Vertebral Injuries: Eight Cases. I. Balensweig, New York.—p. 29.
*Solid Tumors of Urachus. L. Brady, Baltimore.—p. 46.
Primary Malignant Tumors of Long Bones: One Hundred and Seventy Cases. W. B. Coley and B. L. Coley, New York.—p. 63.
*Overgrowth of Long Bones of Legs. M. Harbin, Cleveland.—p. 142.
Thirty-First Report of Progress in Orthopedic Surgery. P. D. Wilson and others.—p. 150.

Mode of Origin of Gallbladder Lesions.—Four hundred and three gallbladders removed at operation were examined by Denton for the purpose of determining by what processes common lesions of the gallbladder are produced. It was not possible to demonstrate lesions that were primarily of bacterial origin. The terms acute, subacute and chronic cholecystitis are considered to be undesirable because they carry the implication of infectious origin and cannot be correlated with clinical conditions. Pathologic states of the gallbladder should be described in morphologic terms, as edema, edema and hemorrhage, hematoma, partial infarction, complete infarction, edematous cicatrix and cicatrix. The presence of gallstones in a gallbladder is not necessarily accompanied by pathologic changes in the gallbladder. In this series of cases, approximately two thirds of the stone bearing gallbladders had definite pathologic changes.

Pathogenesis of Biliary Calculi.—Mentzer is of the opinion that disturbance of the cholesterol metabolism of the body generally, or of the gallbladder wall locally, with a resultant increase in the cholesterol content of bile, is probably a primary factor in the formation of gallstones. Stasis of bile and infection of the gallbladder are not essential to gallstone formation, but both are usually present with all stones. Nuclei of some sort are invariably present, and are possibly essential to the actual formation of stones. Portions of cholesterol laden mucous membrane lying free in the gallbladder cavity probably form the nuclei for a large portion of cholesterin stones. Without a nucleus, it is possible that the ingredients of stones pass out of the gallbladder. These conditions, namely, an increase in the cholesterol content of the gallbladder bile, the presence of a nucleus and a change in the p_H value of the bile, particularly toward alkalinity, are probably the essential features of cholesterin stone formation in the gallbladder.

Fibroma of Urachus.—Brady reports a case of benign fibroma which had arisen from the sheath of the urachus. The history did not suggest that the patient's urachus had remained patent in infancy, nor was any cyst of the urachus present.

Overgrowth of Tibia and Fibula.—Overgrowth of the tibia and fibula in three patients betwen the ages of 12 and 14, reported on by Harbin, seemed to result from entirely different etiologic factors. One patient showed an increase in length due to stimulation of the cartilaginous cells of the epiphysial plate from adjacent osteomyelitis without invasion of the epiphysis. The second patient had a history suggesting congenital syphilis, without manifestations other than a positive blood Wassermann reaction. The third patient showed a generalized enlargement of the lower part of the left leg, with nevus and enlarged veins apparently of congenital origin.

14: 165-456 (Jan.) 1927. Part II

*Bronchography: Iodized Oil. J. J. Singer, St. Louis.—p. 167.
*Technic of Bronchoscopic Introduction of Bismuth Subcarbonate and Iodized Oil for Pneumonography. G. Tucker, Philadelphia.—p. 175.
*Pneumonography with Iodized Oil by Bronchoscopic Method. D. H. Ballon and H. C. Ballon, Montreal.—p. 184.
Septic Conditions of Chest. D. A. Stewart, Ninette, Man.—p. 203.
*Value of Iodized Oil in Diagnosis of Pulmonary Infections. E. W. Archibald, Montreal.—p. 206.
Nontuberculous Pulmonary Disease. W. F. Hamilton, Montreal.—p. 218.
*Experimental Aspiratory Abscess. D. T. Smith, Ray Brook, N. Y.—p. 231.
*Transphrenic Infection. H. L. Beye, Iowa City.—p. 240.
*Paths of Extension of Infection from Focus in Mediastinum. A. V. S. Lambert and F. B. Berry, New York.—p. 261.
Infected Mediastinal Lymph Nodes as Source of Mediastinitis. W. Lerche, St. Paul.—p. 285.
Hernias of Mediastinum During Artificial Pneumothorax: Three Cases. E. N. Packard, Saranac Lake, N. Y.—p. 306.
Eventration of Diaphragm: Four Cases. F. T. Lord, Boston.—p. 316.
Congenital Absence of Left Half of Diaphragm. L. T. LeWald, New York.—p. 332.
*Physiologic Effect of Phrenic Neurectomy. W. S. Lemon, Rochester, Minn.—p. 345.
Sequence in Two-Stage Thoracoplasty. H. Lilienthal, New York.—p. 362.
*Rationale of Operations Helpful in Promoting Recoveries from Pulmonary Tuberculosis. J. L. Yates, Milwaukee.—p. 369.
Accessory Thoracoplastic Operation for Collapse of Large Tuberculous Cavities. E. S. Welles, Saranac Lake, N. Y.—p. 384.
*Uncomplicated Unilateral Bronchiectasis: Late Results of Extrapleural Thoracoplasty. C. A. Hedblom, Chicago.—p. 389.
*Surgical Treatment of Intrathoracic Tumors and Tumors of Chest Wall. S. W. Harrington, Rochester, Minn.—p. 406.
Anesthesia in Extrapleural Thoracoplasty for Advanced Pulmonary Tuberculosis. W. Meyer, New York.—p. 432.
Preliminary Artificial Pneumothorax in Operations on Open Chest. L. Eloesser, San Francisco.—p. 438.

Value of Bronchography.—Bronchography, in Singer's opinion is of great benefit, in combination with careful physical examination. It should not be used in any case in which simpler methods can be used. It shows excellently the bronchial tree, with abnormalities present, and when properly used it is harmless. Five methods are described: injection through the cricothyroid membrane, intratracheal injection by way of the larynx, injection through the bronchoscope, intratracheal introduction of the oil by indirect illumination of the larynx, and injection into the pharynx during a deep inspiration. The first method is recommended for children, the fourth and fifth methods for adults, and the second and third methods when bronchoscopy is performed for other purposes. The fifth method should be tried in adults before the more complicated ones are attempted. If it is unsuccessful, then the fourth is the method of choice.

Technic of Pneumography.—Experience leads Tucker to conclude that the bronchoscopic introduction of opaque substances into the lung for pneumography is safer for the patient and more accurate in its localization than introduc-

tion by blind methods. Bismuth subcarbonate insufflation as originated by Jackson has given the best results in outlining the trachea and larger bronchi and in bronchiectatic dilatation in the larger bronchi. Iodized oil, 40 per cent, is best in abscess cavities and in the periphery of the lung. The most accurate pneumonogram is obtained by the bronchoscopic introduction of the opaque substance on the fluoroscopic table.

Pneumography by Bronchoscopic Method.—The Ballons report on their studies of the bronchial tree of the living subject, injected with iodized oil, 40 per cent, by the bronchoscopic method; and in postmortem specimens, injected with paraffin. The blood was injected with barium sulphate in gelatin, and its relation to the bronchial tree was considered. The physiology of respiration in the normal and the pathologic lung was also studied. Lung abscesses were classified according to studies made following the injection of iodized oil.

Value of Iodized Oil in Diagnosis of Pulmonary Infections.—Archibald advises that, in tuberculous cases, iodized oil should be used with caution. A simpler method of injection than the bronchoscopic probably is best, because, no matter how carefully and skilfully this procedure is carried out, it taxes the patient's strength more than a simple supraglottic injection. Injection of iodized oil in old thoracoplasty cases in which the symptoms persist is valuable. Roentgenograms taken after such injections reveal lesions that cannot be demonstrated by any other method. It is useful at intervals during the progress of a several stage operation, for bronchiectasis or abscess of the lung, in order to estimate the amount and location of the disease that still remains.

Experimental Abscess of Lung.—Pulmonary abscesses have been produced by Smith in mice, guinea-pigs and rabbits by intratracheal inoculation of material scraped from the alveolar border of the teeth of patients suffering from moderately severe pyorrhea. The same morphologic types of organisms have been recovered from these experimental abscesses as were found in both postoperative and nonoperative pulmonary abscesses in man. Smith feels that aspiration of infected material from the teeth and tonsils probably accounts for the greater number of cases of pulmonary abscess, although a small number may result from infected emboli from the upper respiratory passages.

Transphrenic Infection.—In a series of 190 cases of acute and chronic empyemas reviewed by Beye, infection passed through the diaphragm in only a single instance, and in this patient the diaphragm was traumatized at operation. Of twenty-four cases of subphrenic abscess, a transphrenic infection has taken place spontaneously in eight. In another case the pleura was opened in draining the abscess, but already there was such a marked and sudden reaction in the pleura that infection of it was imminent. This is explainable on the basis of the lymphatic drainage of the diaphragm. The latter is supplied with a rich network of lymph vessels which lie on the thoracic and abdominal surfaces of the muscle, penetrate it freely, and drain into the systems of nodes which lie on the thoracic side. Probably, in most cases, extension of infection upward is purely lymphatic at the onset. Few cases are reported.

Paths of Infection from Mediastinum.—The paths enumerated by Lambert and Berry by which infections may spread from a focus in the mediastinum are: (1) through the broad ligaments of the lungs beneath the visceral pleura and into the substance of the lung down the larger branches of the bronchial tree; (2) posteriorly along the bodies of the vertebrae to the endothoracic fascia outside the parietal pleura; (3) upward into the fascial planes of the neck; (4) downward into the retroperitoneal connective tissue, and (5) anteriorly beneath the sternum outside the anterior pleural reflections. Exudates in zone 1 will give rise to roentgen-ray shadows often spoken of as root shadows, and exudates in zone 2 show large fluid collections which widen the normal mediastinal shadow.

Physiologic Effect of Phrenic Neurectomy.—In a series of experiments made by Lemon on dogs, either one or both phrenic nerves were severed. The compensation was sufficient to overcome the loss in function of the half of the diaphragm or of the diaphragm as a whole when both phrenic nerves were severed. The animal was competent to carry on its usual activities without embarrassment or dyspnea.

Rationale of Operations to Promote Recovery From Pulmonary Tuberculosis.—Yates suggests the rationale and illustrates the effectiveness of transfusions of blood and of induced paralysis of the diaphragm when used to supplement other methods, one of which should be suitable exposures to the direct action of sunshine.

Extrapleural Thoracoplasty in Bronchiectasis.—The operation of graded thoracoplasty, in Hedblom's opinion, should be limited to undoubted cases of bronchiectasis. In cases in which the bronchiectasis is complicated by multiple or multilocular pulmonary abscess, the operation is relatively ineffective and the postoperative mortality is high. In a few cases in which abscess was recognized or suspected, improvement approximating a cure has resulted, but the operative mortality was more than 40 per cent. The postmortem examination in all cases showed multiple or multilocular abscess in addition to the bronchiectasis.

Surgical Treatment of Chest Tumors.—Harrington reports on sixteen cases: eleven of them were cases of malignant tumor, two of which were intrathoracic; five were cases of benign tumor, none of which could be differentiated definitely from malignant tumors. Early radical extirpation of malignant tumors, followed by radiotherapy instituted at the time of operation or immediately after operation, has given the best results. In cases of extensive disease, partial removal of the tumor, followed by the use of radium, did not seem to prolong the life of the patient or relieve the symptoms. In six of the cases of malignant tumor, there has not been a recurrence, and the patients have been well for from eleven to eighteen months after radical removal of the tumor. In one case of intrathoracic tumor, a small recurrent tumor was removed after six months. In three cases, death followed recurrence within six months after operation. All of these were cases of extensive malignant disease in children. Operative death did not occur.

Boston Medical and Surgical Journal

195: 1187-1232 (Dec. 23) 1926

Operative Treatment of Fractures. C. L. Scudder, Boston.—p. 1187.
History of Old Surgical Amphitheater. F. A. Washburn, Boston.—p. 1193.
*Influence of Negative Pressure in Sphenoid on Optic Nerve. L. E. White, Boston.—p. 1195.
*Comparative Effects of Borotartrate and Phenobarbital on Seizures of Epilepsy. W. G. Lennox, Newton, Mass., and L. H. Wright, Palmer, Mass.—p. 1199.
Halle Operation for Ozena. R. A. Barlow, Madison, Wis.—p. 1202.

Focal Infection and Optic Nerve Disturbances.—In White's experience, the teeth and the tonsils appeared to be the foci in 70 per cent of cases of optic nerve disturbances, while the ethmoids were involved in less than 10 per cent, so there would seem little excuse for longer considering the ethmoids and sphenoids the all important etiologic factors. They rarely require exenteration. The important thing to do is to remove the focus. Thirty-three optic nerve cases are analyzed. In only 15 per cent were the sphenoids and posterior ethmoids opened, and even in some of these it was unnecessary. Postoperative cicatricial obliteration of the sphenoidal ostium with resulting negative pressure was found in one case.

Potassium Borotartrate and Phenobarbital in Epilepsy.—In a group of nine epileptic patients treated by Lennox and Wright, beneficial results attended the use of potassium borotartrate, in 1 Gm. doses, three times daily, for one month, but were less favorable than results obtained with phenobarbital, in doses of 0.1 Gm. twice daily for one month.

195: 1233-1280 (Dec. 30) 1926

Life Saving Details. F. B. Sweet, Springfield, Mass.—p. 1233.
*Spontaneous Pneumothorax. A. W. Atwood, Worcester, Mass.—p. 1237.
*Intraperitoneal Transfusion of Citrated Blood in Acute Intestinal Intoxications of Infancy. C. F. McKhann, Boston.—p. 1241.
*Acromegaly. M. Bernstein, Philadelphia.—p. 1244.

Familial Spontaneous Pneumothorax.—Atwood reports three cases of spontaneous pneumothorax in a father and his

son. Although both were healthy, strong and rather unusually active men, without definite signs of tuberculosis or other disease of the lungs, the father had spontaneous pneumothorax in the left lung at the age of 37, and again in the right lung at the age of 60, and the son had spontaneous pneumothorax in the right lung at the age of 28.

Intraperitoneal Transfusion of Citrated Blood in Acute Intestinal Intoxication.—From the experimental studies of Siperstein and Sansby which McKhann has confirmed, from published clinical reports and from unpublished observations, there cannot be any doubt that citrated blood is rapidly absorbed from the peritoneal cavity of normal animals and from patients with certain disturbances in which transfusion would be indicated, notably prematurity, athrepsia and anemia. But in a severe disturbance such as the acute intestinal intoxications of infancy, the cellular elements are not readily absorbed, although the plasma seems rapidly taken up. The possibility of giving serum or plasma alone suggests itself. Meteorism and febrile reactions occurred in the cases cited but not to a dangerous degree. The possibility of giving unmatched blood was not considered.

Removal of Hypophysial Tumor in Acromegaly.—Bernstein reports the case of a patient suffering from acromegaly with pressure symptoms, whose hypophysial tumor was removed by a transsphenoidal operation. His death, which was sudden, occurred eight years, eight months and eighteen days after operation. During this period his sight was preserved and his headaches were relieved.

196: 1-42 (Jan. 6) 1927

Thoracoplasty in Pulmonary Tuberculosis. W. Whittemore, Boston.—p. 1.
*Lumbosacral Backache. C. E. Ayers, Worcester.—p. 9.
*Classification of Chronic Arthritis. C. F. Painter, Boston.—p. 16.
*Ovarian Function: II. Relation of Blood Supply to Ovarian Function in Rat. D. Macomber, Boston.—p. 19.
*Id.: III. Relation of Nerve Supply to Ovarian Function in Rat. D. Macomber, Boston.—p. 21.

Lumbosacral Backache.—Ayers believes that lumbosacral arthritis is a much more common cause of back pain than has previously been recognized. The most effective method of dealing with this condition is the production of an ankylosis in this region. Congenital anomalies of the fifth lumbar are not uncommon. Sacralized lumbar vertebrae are frequently the cause of persistent backache and can be relieved only by ankylosis. The approach necessary for a fusion operation in this region gives an excellent opportunity to examine the bony structure and should be done in selected cases in which the roentgen ray does not corroborate the physical examination. The fusion operation is not accompanied by shock and is not a dangerous operation when done properly. Lateral roentgenograms of the lumbosacral region are essential in arriving at a diagnosis of low back pain.

Classification of Chronic Arthritis.—Painter divides the arthritides into three groups: infectious, metabolic and atrophic. He is certain that many of the perplexities attendant on the classification of arthritic lesions and the institution of appropriate treatment will be lessened materially if care is exercised in history taking and physical examination. One should not forget the possibility of a focal infection or that the roentgen ray may throw light on pathologic conditions; but it should not necessarily be assumed that there must be a source of toxic absorption. He thinks that the roentgen ray may be regarded as the court of last resort.

Relation of Blood and Nerve Supply to Ovarian Function.—Macomber interprets his observations as proving conclusively that the nerve supply to the ovary is not necessary to the function of normal reproduction; that the sterility produced by dividing the ovarian artery, veins and nerves is not due to any interference with the nerve supply. Experiments in which the ovarian artery alone was divided without producing any notable amount of sterility showed that the interference with the arterial circulation alone could not be considered as responsible. By exclusion, therefore, this experimental sterility would seem to be due to some interference with the venous return from the ovary. Such a supposition is the more reasonable, as it is well known in human surgery that interference with the venous circulation will often lead to the development of a cystic condition in the ovary.

Canadian Medical Association Journal, Montreal

17: 1-146 (Jan.) 1927

Puerperal Infection. E. Maclean, Cardiff, Wales.—p. 3.
*Toxemias of Pregnancy. W. B. Hendry, Toronto.—p. 7.
Immediate and Ultimate Prognosis in Cardiac Disease. R. D. Rudolf, Toronto.—p. 11.
Present Position of Cancer Problem. J. Miller, Kingston, Ont.—p. 16.
*Preoperative Preparation of Diabetic Patient: "So-Called" Diabetic Gangrene. E. H. Mason, Montreal.—p. 23.
*Diabetic Gangrene. I. M. Rabinowitch, Montreal.—p. 27.
Physiologic Factors Determining Acidity of Gastric Juice and of Gastric Contents. B. P. Babkin, Halifax, N. S.—p. 36.
*Carbon Monoxide Menace and Cancer Problem. G. Luden, Rochester, Minn.—p. 43.
*Acute Gangrenous Cholecystitis. M. H. V. Cameron, Toronto.—p. 48.
Terminal Disinfection. R. S. J. MacDonald, Montreal.—p. 51.
*Hereditary Abnormalities of Eye: II. Eyelids. M. G. Macklin, London, Ont.—p. 55.
Osteitis Deformans: Five Cases. G. J. Gillam, Toronto.—p. 60.
Radiographic Differentiation Between Diploic and Meningeal Vascular Channels. I. M. Thompson, Montreal.—p. 64.
*Hereditary Hemorrhagic Telangiectasia. H. Mackay and F. D. McKenty, Winnipeg, Man.—p. 65.
Ringworm of Hands and Feet. D. E. H. Cleveland, Vancouver, B. C.—p. 68.
Diagnosis of Intussusception. W. E. Gallie, Toronto.—p. 72.
*Use of Iron in Anemia. A. Goldbloom, Montreal.—p. 74.
Cleft Palate. A. M. Forbes, Montreal.—p. 76.
Perforated Peptic Ulcer of Meckel's Diverticulum. A. I. McCalla, Calgary, Alta.—p. 79.
Spindle Cell Sarcoma of Prostate. Sargeant, Hicks, Knight and Harris, Brantford, Ont.—p. 81.
Dermatitis Vegetans. J. Christie, Vancouver, B. C.—p. 84.
*Tannic Acid Treatment of Burns. J. C. Lindsay, London, Ont.—p. 86.
Fracture of Skull in Child Six Months of Age. S. Battley, Windsor, Ont.—p. 86.
Diabetes Mellitus and Myxedema. H. C. Jamieson, Edmonton, Alta.—p. 88.
Persistent Thymus. W. L. Denney, London, Ont.—p. 89.
Case of Encysted Shrapnel. A. O. Rose, Hafford, Sask.—p. 89.
Relative Value of Roentgen-Ray and Physical Findings in Diagnosis of Pulmonary Tuberculosis. A. T. Henderson, Montreal.—p. 90.
New Developments in Knowledge of Gallbladder. C. J. Tidmarsh, Montreal.—p. 92.

Salt Free Diet in Treatment of Eclampsia.—Hendry advocates the use of the salt free diet in preeclampsia. He feels that it has several advantages over other lines of treatment owing to the fact that with it the edema disappears uniformly, the patients are not starved, and general improvement is usual, besides which the treatment is logical and in harmony with the experimental facts. Furthermore, a restriction of salt in the diet of all patients in the last half of pregnancy is of decided value as a preventive measure, and deserves consideration in the general prenatal care of all patients.

Surgery of the Diabetic Patient.—Judging the diabetic patient on the whole as a surgical risk, Mason states that in a clinic well organized for the handling of diabetic cases their mortality should be very little if any above that of nondiabetic cases. This implies a strict hospital regimen, a careful preoperative preparation and a thoughtful postoperative treatment. This state of affairs has been made possible by insulin.

Diabetic Gangrene.—Since 1921, 1,016 patients were observed in the diabetes clinic of the Montreal General Hospital. Thirty-six, or 3.5 per cent of these patients, had gangrene. These cases are analyzed by Rabinowitch and compared with those reported on by Joslin.

Carbon Monoxide Menace and Cancer.—The increasing number of deaths from acute carbon monoxide poisoning, as well as the numerous and diversified sequelae from chronic poisoning which may be found recorded in an already voluminous and steadily increasing literature on the subject, Luden says, seem to justify reference to a carbon monoxide "menace." Whether the assumption is defendable or not, that the prevalence in civilized life of a gas capable of killing in absurdly small amounts might have some bearing on the cancer problem may be deduced from data presented. The points reviewed are: (1) sources of carbon monoxide; (2) effects of carbon monoxide; (3) physiologic concentrations of normal blood constituents, and (4) the chemical aspects of the cancer problem.

Acute Gangrenous Cholecystitis.—Cameron reports seven cases. He advocates cholecystectomy in cases seen early,

when the serosa is still glossy and the ducts are not necrotic, and in which the omentum may be brought up to protect the duodenum and colon from deforming adhesions.

Hereditary Abnormalities of Eye.—Macklin discusses hereditary ptosis, lagophthalmus, cryptophthalmus, epicanthus and distichiasis. She says that persons suffering from the hereditary types of these defects should not reproduce.

Hereditary Hemorrhagic Telangiectasia.—Two cases reported have convinced Mackay and McKenty that the lesions of congenital hemorrhagic telangiectasia may involve the mucous membrane of the whole of the nasal cavities and nasopharynx. In cases of persistent expistaxis of obscure origin, the possibility of this condition should be kept in mind. Cocaine should be useful in the diagnosis of nevoid lesions of the mucous membrane. Radium has shown a definite action in obliterating such lesions in the nose.

Treatment of Anemia.—Goldbloom cites a case of anemia in an infant, which did not respond to iron. When placed on a diet containing liver, beef juice, egg yolk, spinach, cereal, milk, orange juice and cod liver oil, the child got well. The importance of the addition of substances other than iron, notably leafy vegetables and cereals, is emphasized.

Tannic Acid Treatment of Burns.—In the treatment of burns, Lindsay favors the use of 5 per cent tannic acid solution because of the immediate and continued relief from pain, the greatly minimized shock, the markedly lessened absorption of toxic products, and, apparently, the much shorter period of time required for healing.

Colorado Medicine, Denver

24: 1-26 (Jan.) 1927

Rôle of Chronic Maxillary Sinusitis in General Infections. L. B. Lockard and A. J. Argall, Denver.—p. 3.
Manifestations of Paranasal Sinusitis. J. H. Leyda, Denver.—p. 8.
Diseases of Umbilicus. G. E. Rice, Pueblo.—p. 14.
Centenary of Birth of Hermann Brehmer. H. J. Corper, Denver.—p. 16.

Johns Hopkins Hospital Bulletin, Baltimore

40: 1-62 (Jan.) 1927

*Effect of Inorganic Salts on Calcification. P. G. Shipley and L. E. Holt, Jr., Baltimore.—p. 1.
Biometric Study of Relative Cell Volume of Human Blood, in Normal and Tuberculous Males. R. Pearl and J. R. Miner, Baltimore.—p. 3.
*Study of Toxic Absorption from Intestinal Tract in Experimental High Obstruction. L. Braeye, Ghent, Belgium.—p. 33.
Supravital Study of Cells in Lymph Stream of Rabbit. J. A. Kindwall, Baltimore.—p. 39.
*Infantile Rickets: Treatment by Intramuscular Injection of Cod Liver Oil Concentrate. L. Wilkins, Baltimore, and B. Kramer, New York.—p. 52.

Effect of Inorganic Salts on Calcification.—Shipley and Holt assert that sodium and chloride ions in a much lower concentration than that in which they are found in the blood stream prove an effective barrier against rapid calcification. It is equally obvious that, even apart from the inhibitory influence exerted by proteins and other colloids, rapid deposition of calcium salts from the circulating blood is impossible by reason of the sodium chloride concentration, other things being equal. Further studies on sodium chloride and other salts of different valence types are being carried on with the hope of determining, among other things, the nature of this inhibiting salt effect.

Toxic Absorption in Intestinal Obstruction.—An attempt was made by Braeye to influence the passage of toxins obtained from an obstructed bowel through the wall of an isolated loop of intestine. It was found that under the conditions of these experiments a 1 per cent solution of soap did not influence appreciably the passage of the toxin through the intestinal wall. A similar experiment, made with bile added to the intestinal toxin in the proportion of one to ten, leads to the same conclusion; namely, that diffusion is not materially influenced by the presence of bile.

Treatment of Rickets.—Two children with active rickets were treated by Wilkins and Kramer with an ether solution of a concentrate of cod liver oil, injected intramuscularly. Fresh calcification of the rachitic cartilage appeared within three weeks. The changes in the concentration of calcium and inorganic phosphorus of the serum were identical with those previously observed following the oral administration of cod liver oil. The authors conclude that whereas cod liver oil increases the absorption of calcium and phosphorus from the intestine, the fact that it is effective when administered intramuscularly indicates that this is not purely a local action on the intestinal mucosa but is a general one and exerted through the circulation.

Journal of Immunology, Baltimore

12: 423-494 (Dec.) 1926

*New Serum Test in Diagnosis of Tuberculosis and Syphilis. J. Kabelik and J. Vignati, Olomouc, Czechoslovakia.—p. 423.
*Cold Agglutinins in Human Serum. K. Landsteiner and P. Levine, Cleveland.—p. 441.
Neutralization of Atopic Reagins in Vivo. J. A. Clarke, Jr., and M. G. Gallagher, Philadelphia.—p. 461.
*Chemovaccinotherapeusis of Experimental Meningococcus Infection. A. A. Miller, Leningrad, Russia.—p. 467.
Sensitization of Pigeons to Foreign Proteins. J. E. Gahringer, Chicago.—p. 477.

Plasma Test for Tuberculosis and Syphilis.—Kabelik and Vignati describe a plasma test for the diagnosis of tuberculosis and syphilis. They use Lorenc's antigen and herudin plasma instead of serum. The test is performed in the icebox. For physiologic sodium chloride solution as a control they substitute methyl alcohol diluted with the salt solution in the proportion of 1:40. The technic differs from the known Wassermann methods in only one way; namely, the substitution of plasma for serum. The technic of the test and its interpretation are described in detail.

Cold Agglutinins in Blood Serum.—Landsteiner and Levine state that observations made with cold agglutinins would indicate that there exist a number of individual differences in human bloods, the phenomena being much less pronounced than typical iso-agglutination. From several known facts it seems probable that the individual differences such as have been demonstrated by serologic reactions are due to variations in substances other than proteins.

Chemovaccinotherapeusis of Meningococcus Infection.—The possibility of a chemovaccinotherapeusis of experimental meningococcus infections has been investigated by Miller. Ethylhydrocuprein was employed as the chemotherapeutic substance. Dilutions of ethylhydrocuprein (incubation forty-five minutes) 1:500, 1:1,000 and 1:2,000 kill the meningococcus; dilutions 1:4,000 and 1:8,000 inhibit growth, and those of 1:16,000 or more do not influence it at all. A vaccine of one billion meningococci prepared with 1 per cent ethylhydrocuprein solution was used in the experiments. The results obtained were as follows: The ethylhydrocuprein-meningococcus vaccine possesses a higher stimulating action on the processes of local immunity in comparison with the action of a solution of pure ethylhydrocuprein and pure vaccine used separately, apparently owing to the influence of ethylhydrocuprein on the local reticulo-endothelial apparatus. The concentration of ethylhydrocuprein at the focus of disease may produce a direct bactericidal effect on the meningococci. The action of chemovaccine is specific.

Journal of Nervous and Mental Disease, New York

65: 1-112 (Jan.) 1927

Columnar Arrangement of Primary Afferent Centers in Brainstem of Man. W. Freeman, Washington, D. C.—p. 1. (To be cont'd.)
*Castration Threats Against Children. E. P. Farrow, Spalding, England.—p. 21.
Facial Diplegia in Multiple Neuritis. A. B. Yudelson, Chicago.—p. 30.
Malignant Hypernephroma Coincident with Arteriosclerosis in Children. R. R. Dieterle, Ann Arbor, Mich.—p. 42.
Case of Multiple Dural Neoplasms. E. D. Friedman, New York.—p. 50.
Changing Manifestations of Neuroses. I. S. Wechsler, New York.—p. 52.
Encephalitic Amyotrophies. A. Wimmer, Copenhagen.—p. 59.

Castration Threats Against Children.—Farrow states that anybody who, as an adult, has had the startling experience of suddenly remembering quite clearly, after long continued psychanalysis, castration threats being made against him as a very small child, by overpowering adults, will want to do anything he can to avoid the incidence of similar threats against other children, perhaps his own, in the future. There is probably little doubt that the lives of a large number of

people have been ruined (in comparison with what they might have been) by these early castration threats in infancy, and that the resulting completely repressed fear is one of the chief underlying causes of nervousness and neuroticism.

Medical Journal and Record, New York

125: 1-76 (Jan. 5) 1927

Infection of Lactating Breast. P. B. Bland, Philadelphia.—p. 1.
Transient Hepatic Acholia. M. Einhorn, New York.—p. 4.
Teratoid Tumors of Thorax. W. R. Williams, London.—p. 6.
*Gentian Violet and Acriviolet in Treatment of Pernicious Anemia. H. M. Conner, Rochester, Minn.—p. 9.
Malignant Degeneration of Sebacious Cyst of Scalp. L. M. Jacobs, Philadelphia.—p. 11.
Complement and Clinical Evaluation. F. Herb, Chicago.—p. 12.
Microhydro-Anencephalic Anaric Ancyclopic Monster. H. H. Skinner, Yakima, Wash.—p. 16.
Biologic Features of Syphilis. H. P. Jacobson, Los Angeles.—p. 18.
Essential Thrombocytopenic Purpura. H. Koster, New York.—p. 23.
Lung Diseases. J. W. Shuman, Los Angeles.—p. 26.
*Instrument for Treatment of Generalized Peritonitis. C. L. Larkin, Waterbury, Conn.—p. 28.
Necessity for Medically Trained Oral Specialists. A. Owre, Minneapolis. —p. 31.
Stomatologists and Their Education. F. C. Waite, Cleveland.—p. 33.
Alveolar Pyorrhea. O. Romer, Leipzig, Germany.—p. 35.
Oral Sepsis. A. Bassler, New York.—p. 38.
Focal Infection from Stomatologic Point of View. A. M. Nodine, London.—p. 40.
Status of Roentgenogram in Focal Infection. J. W. Post, Philadelphia. —p. 42.
Dental Radiography. B. C. Darling, New York.—p. 44.
School Mouth Hygiene and Stomatology. A. Piperno, Rome.—p. 45.
Acute Appendicitis in Relation to Fourth Era of Surgery. R. T. Morris, New York.—p. 47.
Jewish Contributions to Hygiene of Digestive Tract. E. Podolsky, New York.—p. 49.

Gentian Violet and a Mixture of Acriflavine and Gentian Violet in Pernicious Anemia.—In twenty-three cases of pernicious anemia, Conner administered gentian violet by mouth. In most instances in which the dye has been used for a sufficient time there has been a gratifying rise in the percentage of hemoglobin and in the number of erythrocytes. There was also an increase in leukocytes, in some cases very marked, in others less striking. Six patients reported diminution in the numbness of the hands and feet. In several cases, however, the treatment had to be discontinued because of untoward reactions to the dye, evidenced by nausea and vomiting, and sometimes by an increase in diarrhea. In eighteen cases, the dye treatment was continued long enough to justify a preliminary report. The average age in this group was 18. The average duration of symptoms before the dye treatment was begun was seventeen and one-tenth months. In five cases, the use of the dyes was so brief that detailed data are not included. Gentian violet may be given in solution, capsules or enteric coated tablets. The solution, although sometimes difficult to take, has seemed to be the most effective. Patients are usually started on from 5 to 15 cc. of a 1:1,000 aqueous solution of the dye after each meal, the doses being increased 1 or more cubic centimeters a day, until 50 cc. or more is taken three times daily. It has also been given in doses of 1 or 2½ grain (0.065 or 0.160 Gm.) enteric coated tablets after each meal. A mixture of acriflavine and gentian violet, equal parts, has been given in doses varying from 1/10 to 4/10 grain (6 to 25 mg.) in enteric coated tablets, although sometimes much larger doses are tolerated. It seems rather likely that the best results will be obtained when the dose is gradually increased to the limit of tolerance. In most of the cases dilute hydrochloric acid was also given, and in eleven of the eighteen, transfusion was carried out as well. The most striking results, however, were obtained in those in which transfusions were not given. In all cases, rest in bed and a diet rich in meat, eggs and greens was prescribed. None of the patients continuing the dye treatment have died. This preliminary report is made in the hope that others may be encouraged to test the effect of the dyes.

Abdominal Caisson for Treatment of Peritonitis.—An abdominal caisson for the treatment of peritonitis and for intra-abdominal manipulations is described by Larkin. It is made out of soft pliable gum rubber, is shaped like a silk hat without a top, and has a brim or flange 1 inch wide and an upright wall of 6 inches. The cavity is elliptic, measuring 5 inches anteriorly and posteriorly and 2 inches in its widest dimension. In the middle of the upper surface of the flange are arranged cloth loops or eyelets 1 inch apart completely surrounding the caisson.

Mental Hygiene, Albany, N. Y.

10: 673-896 (Oct.) 1926

Freud's Importance for Mental Hygiene Movement. S. Ferenczi, Budapest, Hungary.—p. 673.
Mental Factor in Economic Adjustment of Five Hundred Disabled Ex-Service Men. J. Feutinger, Chicago.—p. 677.
Prevention of Poor Appetite in Children. C. A. Aldrich, Winnetka, Ill. —p. 701.
Psychiatric Needs in State. H. M. Adler, Chicago.—p. 712.
Psychanalysis as Cultural Factor. O. Rank, Vienna.—p. 721.
One Hundred Domestic Relations Problems. H. Flinn and A. L. Jacoby, Detroit.—p. 732.
1926 Emphases in Psychiatric Social Case Work. A. M. Leahy, Minneapolis.—p. 743.
Constancy of Intelligence Quotient of Mental Defectives. B. M. Minogue, Thiells, N. Y.—p. 751.
Extension of Outpatient Service of Psychopathic Hospital into Rural Community. J. F. Lyday, Iowa City.—p. 759.
Public and Private Provision for Epileptic. L. P. Clark, New York.—p. 787.
Feebleminded in Institutions in United States. H. M. Pollock, Ray Brook, N. Y.—p. 804.

Minnesota Medicine, St. Paul

10: 1-64 (Jan.) 1927

Southern Minnesota Medical Association. H. W. Meyerding, Rochester. —p. 1.
Postpneumonic Atelectasis. T. A. Peppard, Minneapolis.—p. 5.
*Value of Bronchoscopic Examinations. W. S. Lemon, P. P. Vinson, F. W. Gaarde, H. J. Moersch and S. W. Harrington, Rochester.—p. 10.
Hodgkin's Disease. J. A. Lepak, St. Paul.—p. 21.
*Use of Thyroid Extract to Reduce Incidence of Postoperative Embolism. W. Walters, Rochester.—p. 25.
Anal Fistula. L. A. Buie, Rochester.—p. 28.
Diagnosis of Paranasal Sinus Disease. C. L. Larsen, St. Paul.—p. 30.
*Roentgen-Ray Treatment of Abdominal and Pelvic Tuberculosis. F. A. Ford, Rochester.—p. 32.
Tryparsamide Treatment of Neurosyphilis. G. N. Ruhberg, St. Paul. —p. 37.

Value of Bronchoscopic Examinations.—Lemon et al. have been impressed by the improvement in diagnosis and treatment in a large number of cases, particularly of chronic character, because of the cooperation of bronchoscopists and surgeons. The examination with the bronchoscope has not only helped in the precision of diagnosis, but has clarified clinical opinions as to the cause of localizing signs and symptoms. It has been the means by which certain unusual lesions have been demonstrated, and it has provided a method by which materials may be obtained for pathologic examination. The function of the instrument is not alone, however, confined to diagnostic procedures; it has been of great service in the treatment of certain cases heretofore managed only with considerable difficulty, and frequently unsuccessfully.

Use of Thyroid Extract to Reduce Incidence of Postoperative Embolism.—Believing that not only the rate of circulation but also the metabolism of the body might be increased by administering thyroid extract, with resulting increase in peristalsis, increasing depth of respiration, acceleration of blood flow, and, indeed, speeding up of all the functions of the body, Walters has given thyroid extract, by mouth, in 2 grain (0.13 Gm.) doses, three times a day, for seven days, beginning on the third or fourth day after operation and continuing until the patient was out of bed. Deleterious effects were not noted. The patients were urged to move themselves about in bed, especially to turn from side to side. Deaths from pulmonary embolism did not occur among patients less than 70 years of age. In the series of 1,745 cases, forming the basis of this report, there were two patients, both more than 70 years of age, who died from other causes, in whom unexpected and coincidental pulmonary embolism was found at necropsy. Both showed clinical evidence of marked cardiovascular disease, which was found at necropsy.

Roentgen-Ray Treatment of Abdominal and Pelvic Tuberculosis.—Ford reports definite evidence of instances of improvement, following roentgen-ray treatment, in 66 per

cent of the cases. Roentgen-ray treatment in itself has apparently not increased the percentage of continued cures in cases of abdominal or pelvic tuberculosis over that obtained by other methods. However, roentgen-ray treatment, from its average tendency toward amelioration, may well be considered a method worthy of thorough trial in cases of abdominal or pelvic tuberculosis.

Missouri State Medical Association Journal, St. Louis

24: 1-48 (Jan.) 1927

*Operative Treatment of Scoliosis. F. D. Dickson, Kansas City.—p. 1.
*Etiology of Infantile Diarrhea. J. D. Van Cleve, Malden.—p. 6.
Roentgen-Ray Examination of Chest. L. G. Allen, Kansas City, Kan.—p. 13.
*Infectious Mononucleosis, or Acute Benign Lymphadenosis. T. Jager, Wichita, Kan.—p. 15.
County Health Unit—Is It Worth Expense? J. F. Chandler, Oregon.—p. 18.

Operative Treatment of Scoliosis.—Dickson favors the fusion operation in these cases. He has operated in twenty-eight cases. The greatest number of vertebrae fused was fifteen; the least number of vertebrae fused was eight. The results have been nearly uniformly successful; only one case of the twenty-eight has been a failure. In the remaining twenty-seven cases, none of the patients are wearing supports except in the most recent cases; all have definite improvement in deformity, which has been maintained without relapse. All are leading ordinary lives, being at work or at school, and none have any trouble with their backs.

Classification of Infantile Diarrhea.—Van Cleve classifies the infantile diarrheas as being simple, toxic and dysentery.

Infectious Mononucleosis.—The two cases described by Jager have many features in common, notably the enlargement of the lymph glands and spleen, the fever and the abdominal pain. The latter was quite prominent in the first case and severe enough to suggest the possibility of an acute abdominal disease, such as appendicitis. The patient had nausea and vomiting and some fever.

Nebraska State Medical Journal, Norfolk

12: 1-40 (Jan.) 1927

Compression Fracture of Spine. H. F. Johnson, Omaha.—p. 1.
Relation of Focal Infection to Systemic Disease. J. J. Duffy, Omaha.—p. 7.
Liver Function Tests. E. N. Deppen, Lincoln.—p. 14.
Progress of Surgery. H. H. Davis, Omaha.—p. 16.
Case of Bronchiectasis with Lipiodol Injection. G. P. Pratt, Omaha.—p. 20.
Carcinoma of Thyroid. A. F. Tyler, Omaha.—p. 23.
Contractures of Knees, Demonstration of Appliances. J. P. Lord, Omaha.—p. 26.
Two Cases of Extreme Degrees of Strabismus Showing Results of Operations. J. M. Banister, Omaha.—p. 26.
Osteitis Fibrosa Cystica (Femur); Congenital Anomaly of Patella; Skeletal Traction in Fracture of Femur; Fractures of Foot. J. W. Martin, Omaha.—p. 27.
Carcinoma of Thyroid; Lymphosarcoma of Duodenum. B. C. Russum, Omaha.—p. 29.
Allergen Sensitization Test. E. L. MacQuiddy, Omaha.—p. 30.

New York State Journal of Medicine, New York

27: 1-42 (Jan. 1) 1927

*Treatment of Eclampsia. F. W. Rice, New York.—p. 1.
Cancer Situation in State of New York. J. M. Swan, Rochester.—p. 8.
Indications for Radical Frontal Sinus Operation with Report of Cases. R. T. Atkins, New York.—p. 12.
Treatment of Aerogenes Capsulatus (or Gas Bacillus) Infection in Civil Life. J. Tenopyr, Brooklyn.—p. 16.

Treatment of Eclampsia.—Rice analyzes 222 cases of eclampsia occurring among 42,070 deliveries. One hundred and twenty-nine cases occurred in primiparas, with twenty-six deaths; ninety-three in multiparas, with twenty-one deaths. Among 110 antepartum cases, there were twenty-seven deaths; fifty-one intrapartum cases with eleven deaths, and sixty-one postpartum cases with nine deaths. The greatest number of cases developed during the last month of pregnancy, ninety-six cases, or 43 per cent, as compared to the previous month with fifty-three cases, or 24 per cent. In the series of 222 cases, there were forty-seven maternal and 101 fetal deaths, giving a gross maternal mortality of 21 per cent, with a fetal mortality of 45 per cent.

Ohio State Medical Journal, Columbus

23: 1-100 (Jan.) 1927

Neurologic Surgery. C. E. Locke, Cleveland.—p. 21.
Modern Conception of Psychoneuroses. C. E. Kiely, Cincinnati.—p. 27.
Uterine Displacements: Intra-Abdominal Method of Correction. J. G. Blower, Akron.—p. 31.
Better Obstetrics. M. A. Tate, Cincinnati.—p. 35.
Relief of Anginal Pain. P. Hohly, Toledo.—p. 38.
Nasal Accessory Sinus Disease. L. E. Brown, Akron.—p. 39.
Vaccination for Smallpox. W. T. Wilkins, Jr., Piqua.—p. 42.
Relation Between Public Health and Medical Practice. L. G. Bowers, Dayton.—p. 46.

Philippine Islands Medical Association Journal, Manila

6: 359-418 (Nov.) 1926

*Analysis of 76,532 Cases Admitted to Philippine General Hospital. P. D. Gutierrez and A. F. Gutierrez, Manila.—p. 359.
Alkaline Treatment of "Lepra Reaction." C. Nicolas and L. B. Delgado, Culion Leper Colony.—p. 373.
*Acute Cardiac Beriberi in Adults. W. Vitug, Manila.—p. 380.

Incidence of Certain Diseases in Philippines.—In a study made by P. D. and A. F. Gutierrez of 76,532 medical cases at the Philippine General Hospital, intestinal parasitism, notably ascariasis, tops the list of diseases, comprising 15.82 per cent. Pulmonary tuberculosis is second, with 6.16 per cent; amebic dysentery is third, showing 5.52 per cent. Liver abscess occurred in 3.11 per cent of the cases of amebic dysentery. Influenza seems still to be endemic in the Philippines. Dengue apparently has declined. An average of only ten cases is reported a year. Typhoid occurred in 4.84 per cent of all cases. The mortality continued to be high; on the average it is 22.54 per cent. Syphilis is present in the Philippines to the extent of 0.98 per cent of all cases. Lobar pneumonia is twelfth in the list and shows 2.27 per cent of all cases. The average mortality is 24.27 per cent.

Symptoms of Acute Cardiac Beriberi.—Seven cases are reported by Vitug. The clinical picture is that of cardiac decompensation: dyspnea or difficult labored respiration; cyanosis and congestion of the face; pulsating veins at the neck coupled with an increased cardiac area of dulness, rapid heart beat and weak first mitral sound, and a palpable, enlarged, pulsating liver. However, primary cardiac decompensation, complicating valvular diseases, responds readily to digitalis and its allied remedies. In acute beriberi the failing heart does not yield as readily to this drug, even with heroic doses. Differentiating symptoms are: numbness and heaviness of the legs and feet, with or without anesthesia at the tibial surfaces; chest oppression and a feeling of constriction around the chest. Aphonia or, at least, a small deep voice is a constant sign. The swollen, full, rounded, congested face and the enlarged neck attract attention at a glance.

Physical Therapeutics, Baltimore

44: 621-684 (Dec.) 1926

High Frequency Currents: Scientific and Practically Applied Conception. J. E. G. Waddington, Detroit.—p. 621.
Diathermy in Circulatory Disorders. F. De Kraft, New York.—p. 627.
Diathermy in Localized Cirrhosis of Liver Caused by Infective Gallbladder Disease. A. Bassler, New York.—p. 635.

Southern Medical Journal, Birmingham, Ala.

20: 1-84 (Jan.) 1927

*Intraperitoneal Transfusion of Blood in Infancy and Childhood. C. G. Grulee, Chicago.—p. 1.
Cancer of Stomach. J. S. Horsley, Richmond, Va.—p. 7.
Problem of Gastric Cancer. R. Wilson, Charleston, S. C.—p. 10.
Transient Hepatic Acholia. M. Einhorn, New York.—p. 12.
*Laryngeal Nerves: Relation to Thyroid. H. Dupuy, New Orleans.—p. 15.
Biopsy in Diagnosis of Malignancy. J. C. Bloodgood, Baltimore.—p. 18.
Cardiac Failure. H. A. Christian, Boston.—p. 28.
*Keratitis as Complication of Dengue Fever. S. Richardson, Jacksonville, Fla.—p. 32.
Urinary Tract Pathology: Cases. W. J. Wallace, Oklahoma City.—p. 38.
Benign Uterine Hemorrhage. J. P. Keith, D. Y. Keith and J. C. Bell, Louisville.—p. 43.
Diphtheria Control in Rural Districts. H. G. Grant, Richmond, Va.—p. 47.
Venereal Prophylaxis. W. M. Brunet, New York.—p. 52.

Intraperitoneal Transfusion of Blood in Infancy.—Grulee regards intraperitoneal transfusions of blood as being a

therapeutic measure of great value in many severe conditions encountered in pediatric practice. In some instances the more laborious and difficult route of blood transfusion, the intravenous, may be used, but in many cases the only one available is intraperitoneal.

Laryngeal Nerves: Relation to Thyroid.—Dupuy points out that a study of the larynx, before operation is performed on the thyroid, will protect the operator from the accusation of having caused a paralysis that really existed previous to operation.

Keratitis as Complication of Dengue Fever.—Richardson has seen six cases of keratitis, all of which occurred in the first week of convalescence from dengue fever. In each instance, it was definitely established clinically that the patient had suffered from dengue. Four of the cases were of the typical dendritic variety, the corneal lesions assuming a characteristic arborescent conformation. The remaining two cases were of the vesicular type, the lesions never coalescing. Iritis or hypopyon did not complicate any of the cases. Partial anesthesia of the cornea was observed in three of the patients, while in the other three cases there was unimpaired corneal sensation. In all instances, the corneal lesions were unilateral. Much importance was made of the ocular discomfort occurring during the acute stage of the disease by each of the patients. Smears and cultures failed to reveal anything. Three of the patients were relieved within two weeks without impairment of vision. One case persisted over a period of three months, vesicles forming in successive crops, and ultimately the vision was reduced from 20/30 to 20/70 because of a central opacity that resulted. Two cases were of three weeks' duration and terminated with a very slight reduction in vision as a result of nebular opacities.

West Virginia Medical Journal, Charleston

23: 1-56 (Jan.) 1927

Future of Scientific Medicine—Problem of Public Concern. L. L. Bigelow, Columbus, Ohio.—p. 1.
Problems Confronting Profession. S. Leigh, Norfolk, Va.—p. 11.
Classification and Differential Diagnosis of Common Forms of Goiter; Iodine Problem. D. M. Aikman, Wheeling.—p. 18.
Surgical Treatment of Goiter. W. R. Goff, Parkersburg.—p. 24.
Medical Aspect of Goiter. H. L. Robertson, Charleston.—p. 27.
Treatment of Goiter. E. P. Sloan, Bloomington, Ill.—p. 32.
Medical Ethics. R. W. Fisher, Morgantown.—p. 36.
Hemochromatosis. I. C. Hicks, Huntington.—p. 41.
Spontaneous Cholecystenterostomy. B. Banks, Charleston.—p. 41.

Wisconsin Medical Journal, Milwaukee

26: 1-56 (Jan.) 1927

Nephritis and Hypertension. J. Miller, Chicago.—p. 1.
Prognosis in Chronic Hypertonia. L. M. Warfield and F. D. Murphy, Milwaukee.—p. 6.
Liver Extract and Blood Pressure. W. J. Macdonald, St. Catharines, Ont.—p. 15.
Physiotherapy: Use and Abuse. C. Pope, Louisville, Ky.—p. 21.
Health Activities in Communities Without Full-Time Health Department. W. D. Stovall, Madison.—p. 28.
*Lumbar Sympathectomy by Abdominal Route in Case of Raynaud's Disease. E. H. Mensing and J. O. Dieterle, Milwaukee.—p. 30.
Open Safety-Pin Swallowed by Child Twenty Months Old. J. O. McCracken, Kenosha.—p. 31.
General Practitioner in Medicine. E. Evans, La Crosse.—p. 32.
Swimming Pool Sanitation. W. D. Stovall, Madison.—p. 33.

Lumbar Sympathectomy in Raynaud's Disease.—In a case of Raynaud's disease occurring in a man, aged 32, Mensing and Dieterle excised the right and left lumbar sympathetic chain, including four ganglions. Some difficulty was encountered in mobilizing the vena cava on account of lateral branches, which had to be ligated. The exposure, by use of packs, was difficult and somewhat unsatisfactory. In removing the chain on the left side, the intestines were displaced from the abdominal cavity and kept retracted under hot packs. This exposure was much more satisfactory, and after isolation and retraction of the left ureter and the abdominal aorta, the left chain was easily exposed and removed. The abdominal convalescence has been uneventful and for the first time in eight years the patient is entirely relieved of pain in the feet. Four weeks after the operation, the sensation of warmth had returned to both feet, and except for the very tips of some of the toes, the feet felt warm to palpation.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Disease in Childhood, London

1: 323-372 (Dec.) 1926

*Acute Invagination of Intestine in Small Children. S. Monrad.—p. 323.
*Effects of Scarlet Fever on Rheumatic Subjects. F. J. Hector.—p. 339.
Experiments with Hemolytic Streptococcus Toxin of Varying Origin in Connection with "Dick" Test for Scarlet Fever. W. S. C. Copeman.—p. 342.
*Creatinine Coefficient in Infant. O. S. Rougichitch.—p. 348.
*Effect of Lethargic Encephalitis on Intelligence of Children. S. Dawson and J. C. M. Conn.—p. 357.
*Relation of Hypertelorism to Mongolism Case. J. V. C. Braithwaite.—p. 369.

Acute Invagination of Intestine in Children.—One hundred and fifteen cases of acute intestinal invagination are analyzed by Monrad. There were sixty-six ileocecal, twenty-one colic, nineteen ileocolic and six iliac invaginations. There were also three mixed forms; namely, two iliac-ileocecal invaginations and one iliac-ileocolic. Out of eighty-seven large intestine invaginations, fifty-nine occurred in infants under 1 year; but out of the twenty-five small intestine invaginations, only eleven occurred in children under 1 year. Monrad favors nonsurgical reduction, which, he says, does not cause nearly so high a mortality as dose surgical reduction. After the child is well under chloroform narcosis, Monrad palpates the whole of the invagination swelling as accurately as possible and tries to reduce it. He describes his method for each type of invagination. After the taxis is finished, whether it is considered to have succeeded or not, he injects water into the intestine, using, as Hirschsprung does, an enema syringe and Oser's sound, which are introduced as high up as possible. When water begins to ooze out of the anus at the side of the sound, he stops pumping and lets the water run slowly out again. He never makes more than one bloodless attempt at reducing the intussusception; if this fails, he resorts to laparotomy. He has never seen rupture of the intestine occur as a result of this treatment. Ninety-four patients were subjected to bloodless treatment. Of these, eighty-four received only this kind of treatment, while ten had a subsequent laparotomy performed after taxis had failed. The results were: taxis alone, seventy-two cured and twelve died, 14.3 per cent mortality; taxis and secondary laparotomy, four cured and six died, 60.0 per cent mortality.

Effects of Scarlet Fever on Rheumatic Subjects.—Hector's observations of forty-seven cases of scarlet fever with cardiac symptoms show that the almost invariable result of scarlet fever on a heart already injured by rheumatism is a rekindling of the old trouble which in some cases had been quiescent for a considerable period. Further, a mild or moderate attack of scarlet fever is quite capable of bringing this about.

Creatinine Coefficient in Infant.—The rate of creatinine excretion in twenty-eight male infants between the ages of 6 and 52 weeks and in varying nutritional condition, ranging in percentage of expected weight between 38 and 110, was studied by Rougichitch. He says that the daily creatinine elimination, being constant, is entirely independent of the age of the infant. The daily creatinine output in all the infants is found to be closely related to the body weight, and practically independent of the nutritional condition. It was found that in wasting, the reduction of active (muscular) tissue is parallel with the degree of wasting or the total loss of body weight. The creatinine coefficient as an index of muscular development of the infant was determined and was found to be on an average 4.6, as compared with that in adults (male: —8-11, and female: —5.8), thus indicating the relatively poor development of the muscular system in infancy.

Effect of Epidemic Encephalitis on Intelligence of Children.—Dawson and Conn found the average intelligence of forty-six children suffering from the after-effects of epidemic encephalitis significantly lower than that of 974 other hospital patients and of their own brothers and sisters. The mean intelligence of those whose illness had lasted more than twelve months was significantly lower than that of the patients whose illness was of shorter duration. The average intelligence of thirty of these patients who were retested after

intervals varying from seven to thirty-six months showed a significant deterioration at the second test. This deterioration appears to be due to arrested mental development. The arrest of development is most serious in very young children. Post-encephalitic children with the parkinsonian syndrome showed a deterioration in intelligence not significantly different from that of the other patients. There was not any significant difference between the intelligence of the twenty-nine patients showing disturbances of character and emotionality and that of the remaining seventeen.

Hypertelorism and Mongolism.—A mild case of hypertelorism is reported by Braithwaite. The presence of characteristics usually associated with mongolism in this and other cases is discussed. It is suggested that dyspituitarism is a lesion common to the two conditions.

British Journal of Ophthalmology, London

11: 1-48 (Jan.) 1927

British Masters of Ophthalmology Series: 19. John Scott, 1798-1846. R. R. James.—p. 1.
Corneal Section in Cataract Extraction: Small Maneuver. R. F. Moore.—p. 10.
Crater-Like Hole and Coloboma of Disk Associated with Changes at Macula. K. T. A. Halbertsma.—p. 11.
Bitemporal Contraction of Visual Field in Pregnancy. I. Abramowicz.—p. 17.

British Journal of Radiology, London

31: 469-520 (Dec.) 1926

Radiologic Treatment of Cancer of Breast. A. Soiland.—p. 469.
Morphology of Cervical Carcinoma of Uterus as Basis for Judgment of Sensibility of Rays. R. Cordua.—p. 477.
*Method of Introducing Lipiodol in Bronchi for Diagnostic Purposes. F. Abramovitch.—p. 487.
Cholecystography. K. Hermann.—p. 491.
Radiologic Study of Digestive Tract in Normal Infants. De Backer and Van de Putte.—p. 493.
*Radiologic Diagnosis of Ileocecal Tuberculosis. R. Feissly.—p. 498.
Selectivity of Secondary Radiations. M. Ponzio.—p. 502.
Roentgenologic Representation of Enlarged Gallbladder. L. Bischoff.—p. 506.
Portable Orthodiagraph. L. Bischoff.—p. 510.

Method of Introducing Iodized Oil into Bronchi.—Abramovitch first anesthetizes the throat and trachea with cocaine and procaine and then introduces warm iodized oil. A serious state of the patient, and contracted kidneys are contraindications to the method.

Radiologic Diagnosis of Ileocecal Tuberculosis.—Feissly publishes data on a number of cases of ileocecal tuberculosis which demonstrate the value of the roentgen ray in the diagnosis of this condition.

China Medical Journal, Shanghai

40: 1165-1250 (Dec.) 1926

*Amebic Liver Abscess. A. I. Ludlow.—p. 1165.
China's Past and Present Opportunities in Tropical Medicine. H. E. Meleney.—p. 1189.
*Rat-Bite Fever in China. W. W. Cadbury.—p. 1204.
Conversion of Chinese Ages to Foreign Age Equivalents. P. H. Stevenson.—p. 1207.
*Tomb Treatment of Cholera. A. Cannon.—p. 1210.
Laws of Variation and Heredity. A. B. D. Fortuyn.—p. 1216.
Case of Gangosa. V. A. Shaw.—p. 1236.
The 1926 Hoihow Cholera Epidemic. N. Bercovitz.—p. 1237.

Amebic Liver Abscess.—Ludlow reports on 160 cases of liver abscess occurring in Koreans. A history of previous diarrhea or dysentery was obtained in 90 per cent. In three cases, *Endameba councilmanii* was the only ameba found in the feces. The abscess developed, as a rule, insidiously. Large abscesses were present with nearly normal pulse, temperature, respirations and blood count. The average respiration rate is 25. The large single abscess of the right lobe of the liver predominated. Deep-seated pain in the region of the abscess, elicited by a sudden thrust with the end of the finger, was an important and practically constant sign. The "follow up" mortality of 117 open operations was 11.1 per cent, and of forty-three aspirations, 2.3 per cent, or a total of 8.75 per cent. The early and energetic treatment of amebic dysentery with emetine and other medication is said to be an efficient prophylactic for amebic liver abscess. Ludlow has not seen one develop in Koreans or foreigners thus treated.

Rat-Bite Fever in China.—Cadbury reports two cases, the first two, he says, in which the blood was examined for the specific spirochete and the organism was demonstrated.

Tomb Treatment of Cholera.—In the Tomb treatment of cholera an essential oil mixture is used, which is made up as follows: spirits of ether, 30 minims (2 cc.); oil of cloves, 5 minims (0.3 cc.); oil of cajuput, 5 minims; oil of juniper, 5 minims; aromatic sulphuric acid, 15 minims (1 cc.). The dose is 1 drachm (4 cc.) in half an ounce (15 cc.) of water, every half hour. The average dose required is approximately 8 drachms (30 cc.). One drachm in half an ounce of water, daily, is said to be a preventive. Cannon thinks that the secret of the treatment lies in the phenol (carbolic acid) contained in the oil of cloves. There is reason to believe that this treatment saved both Shameen and Canton from a severe epidemic of cholera.

"Gann," Japanese Journal of Cancer Research, Tokyo

20: 51-69 (Dec.) 1926

*Glutathione Contents of Malignant Tumors, Especially Rous Chicken Sarcoma. H. Yaoi and W. Nakahara.—p. 51.
Action of Mesothorium and Roentgen Rays on Single Celled Organism "Gonium Pectorale." R. Tsukamoto.—p. 61.
*Histologic Changes in Irradiated Carcinomas. H. Yamakawa.—p. 68.

Glutathione Contents of Malignant Tumors.—Glutathione, the autoxidizable substance of fundamental importance in the respiration of almost all the living cells, was found by Yaoi and Nakahara in the Rous chicken sarcoma in negligible quantity, while the same substance is present in abundance in other malignant tumors and normal tissues. It is of interest to note that the Rous chicken sarcoma is unique in its ability to withstand desiccation. The connection between the practical absence of glutathione and the resistance to desiccation, while it cannot be definitely established, would seem highly probable.

Histologic Changes in Irradiated Carcinomas.—In specimens of irradiated carcinomas, Yamakawa has noted degenerative changes in the cancer cells and increased connective tissue. He recommends small fractional doses rather than the larger dose, which is apt to cause necrosis. Connective tissue hyperplasia is the end to be attained in bringing about a cure of cancer.

Japan Medical World, Tokyo

6: 299-331 (Nov.) 1926

*Experimental Inoculation of Disease of Wild Rabbits into Human Body, and Its Bacteriologic Study. H. Ohara.—p. 299.
Pathology of Schistosomiasis in Japan. A. Fujinami.—p. 304.
Pharmacologic Studies of Snake (Agkistroden Blomhoffi) Venom. H. Wada.—p. 308.

Experimental Human Inoculation of Disease of Wild Rabbits.—In an experimental human inoculation, made by Ohara, the incubation period of this disease was fifty-two hours. Cultures made from the removed lymph gland showed a rod bacillus resembling the hay bacillus, and a diplococcus. A special point worth mentioning is the remarkable hypertrophy of the heart. When its contents are rubbed against the human body, the disease will ensue. When the content of the heart is collected in a sterile condition and examined microscopically, a large number of gram-positive diplococci are found.

6: 333-367 (Dec.) 1926

*Biologic Examination of Ohara-Haga Coccus. T. Haga and H. Ohara.—p. 333.
Studies on Heterologous Antigenicity of Chicken Egg and Lipoidal Bodies of Yolk of Egg. M. Matsuda.—p. 335.
*Etiology of Raynaud's Diseases. S. Iwai and N. Meisai.—p. 345.

Ohara-Haga Coccus.—This diplococcus was recovered by Ohara from the suppurating lymph gland of a patient affected by an acute febrile disease transmitted by a wild rabbit.

Etiology of Raynaud's Disease.—Iwai and Meisai assert that this disease is caused by an autohemagglutinin, and not by a neurosis of vasomotor nerves. This substance agglutinates the blood corpuscles and these occlude the vessels.

Japanese Journal of Pharmacology, Kyoto

3: 1-16 (Sept. 20) 1926

*Action of Cortical Extract of Suprarenal. M. Fujii.—p. 1.
Contribution to Knowledge of Action of Quinine Alkaloids on Peripheral Blood Vessels. N. Nakano.—p. 7.

3: 17-23 (Nov. 20) 1926

Antitoxic Action of Various Endocrine Gland Preparations on Morphine. M. Fujii.—p. 17.
Antagonistic Action of Novocain and Caffeine Against One Another. M. Shinagawa.—p. 17.
Influence of Ozone on Action of Various Drugs on Intestinal Action. H. Sugano.—p. 18.
Action of Ozone on Blood Vessels. H. Sugano.—p. 19.
Influence of Atropine, Lobelin, Hexeton and Epinephrine on Acute Morphine Poisoning. R. Iwasaki.—p. 19.
After-Effect of Digitalis Bodies and Substances with Digitalis-Like Action. K. Hayaski.—p. 20.
Synergistic Action of Cocaine and Potassium. J. Kawabata.—p. 21.
Pharmacologic Investigation of Heart Preparation by Lowe's Method: I. Y. Tsuda.—p. 21.
Id.: II. Y. Tsuda.—p. 22.

Action of Cortical Extract of Suprarenal.—Fujii summarizes his observations as follows: Intravenous injection of cortical extract of suprarenal causes a fall in blood pressure and augmentation of the respiratory movements in rabbits. The small intestine is stimulated, showing increase in tonus and augmentation of pendulum movements. These actions are considered to be the result of the stimulant effect of the extract on parasympathetic nerve endings. The extract does not have a marked toxicity on mice.

Journal of Biochemistry, Tokyo

6: 383-506 (Oct.) 1926

Influence of Bile Acids on Fat Metabolism. S. Ikoma.—p. 383.
1. Hydrogen Ion Concentration During Fat Cleavage by Steapsin and Bile Acids. 2. Relation Between Structure of Bile Acids and Fat Splitting Action. M. Shoda.—p. 395.
Chemical Analysis of Muscle of Crab, Grapsus Nankin (Pang-Hsieh). K. H. Lin.—p. 409.
*Biochemical Studies on Growth of Paramecium. T. Ugata.—p. 417.
*Id.: Effect of Splitting Products of Nucleic Acid on Division Rate in Paramecium Caudatum. T. Ugata.—p. 451.
*Experiments on Action of Parasympathetic Poisons on Blood Sugar: I. Influence of Eserine and Pilocarpine Epinephrine Hyperglycemia. T. Sakurai.—p. 465.
Id.: II. Lowering of Blood Sugar by Stimulation of Parasympathetic. T. Sakurai.—p. 487.

Effect of Nuclear Compounds on Cell Division.—Evidence is presented by Ugata showing that the nuclear compounds, used in the form of sodium nucleate, play a prominent rôle in the operation of cell division.

Effect of Uridine on Cell Division.—The significant effect of sodium nucleate, to which attention has already been drawn by Ugata in a previous paper, is revealed also in the case of uridine, one of the chemical constituents of nucleic acid, which has a pyrimidine group in the molecule. This being true, the following conclusion is deduced: The outstanding effectiveness of the nucleate with regard to reviving the vitality in *Paramecium* owes its action to the presence of a pyrimidine nucleoside in its molecule. Certainly, the pyrimidine group as a nuclear component may play some important rôle in cell division and cell vitality at large.

Prevention of Suprarenal Hyperglycemia.—Sakurai has determined that physostigmine (eserine) and pilocarpine prevent suprarenal hyperglycemia.

Kitasato Archives of Experimental Medicine, Tokyo

7: 1-93 (Dec.) 1926

Antibiosis Among Bacteria Especially in Relation to Their Proteolytic Ferments. I. Otsubo.—p. 1.
Biologic Study of Hemolytic Streptococci: VII. Production of Hemolysin. N. Ito.—p. 29.
Id: VIII. Catalase. N. Ito.—p. 51.
Prevention of Hydrophobia. S. Kawatani.—p. 61.

Medical Journal of Australia, Sydney

2: 753-784 (Dec. 4) 1926

Arthritis Deformans. H. C. Adams.—p. 753.
Treatment of Arthritis Deformans. J. W. Hoets.—p. 755.
Case of Strychnine Poisoning. A. A. Lendon.—p. 757.
Medicolegal Experiences. A. F. Lynch.—p. 760.
Use of Diathermy in External New Growths Outside Mucous Cavities. R. Vallack.—p. 764.
Management of Narcosis in Childbirth. S. E. Humphreys.—p. 767.
Pernicious Anemia or Sprue. S. O. Cowen.—p. 769.

2: 785-820 (Dec. 11) 1926

*Muscle Trauma Caused by Common Incisions Used in Laparotomy. R. B. P. Monson.—p. 785.
*Abdominal Incisions: Standardization. H. Peet.—p. 790.
Laënnec. A. W. Holmes à Court.—p. 794.
Commemoration of Laënnec: His Work on Heart and Lungs: His Invention of Stethoscope. F. G. Griffiths.—p. 796.
Precursors of Laënnec in Diagnosis of Diseases of Heart and Lungs. L. Cowlishaw.—p. 799.
Leprosy Problems. C. Cook.—p. 801.
Perisinus Abscess. E. P. Blashki.—p. 803.
Case of Hydatid Disease of Liver with Obstruction of Common Bile Duct by Daughter Cyst. F. C. Burke-Gaffney.—p. 804.

Muscle Trauma Caused by Common Laparotomy Incisions.—The incision which in Monson's opinion produces the minimum amount of injury is that in which, after the rectus sheath has been opened, the muscle is retracted medially. By this approach the abdomen may be opened rapidly and with little bleeding and a good exposure obtained. This is contrary to the general teaching, which is that too many nerves are injured and consequently much degeneration of muscle may be caused. Those who maintain this view have forgotten the very free anastomosis of nerve fibers that occurs in the muscle layer between the lower intercostal nerves. The next best incision is obviously the midrectal incision with splitting of the fibers of the rectus. Although a little more degeneration is present here than in the previous incision, it is still comparatively negligible and the entry into the abdomen, quickly made, is practically bloodless in most cases and can readily be extended, if necessary. The results of Monson's experiment do not bear out the hypothesis that it causes degeneration in the area below the incision and also liability to both incisional and inguinal hernias. In the case of the gridiron incision, the result seems contrary to what is usually taught. There was a very considerable amount of degeneration present in all areas examined. The pathologic changes in the medial and lateral aspects of the incision suggest the likelihood of a subsequent ventral hernia. The approach through the rectal sheath with lateral retraction of the rectus does not seem to be the perfect anatomic incision that its admirers claim. Certainly there is little interference in the lateral half of the rectus muscle, but the changes in the medial half are uniformly great in the three areas sectioned; while the sections below the incision reveal great pathologic changes which are equaled only by the corresponding sections in the gridiron incision.

Abdominal Incisions.—Peet asserts that the commonly used vertical incisions possess the following serious defects: (*a*) Anteriorly they cut across the direction of the great aponeurosis, across the peripheral nerves and are in the position of minimum vascular and lymphatic supply and therefore in the position least favorable to sound healing. (*b*) They give a limited and inferior exposure with resulting defective surgery, especially in gallbladder work. (*c*) They have a tendency to produce postoperative hernia, owing to the constant lateral pull of the abdominal muscles and the injury to the nerves. They possess the advantage that they are more rapidly and easily performed than the transverse type of abdominal incisions and therefore are the most suitable when extensive exposure is not required and when speed of operating is essential. The transverse type of abdominal incision possesses the following important advantages over any other type of incision: (*a*) Anteriorly the incision runs in the direction of the fibers of the aponeurosis and of the peripheral nerves and in the direction which receives the maximum vascular and lymphatic supply, and is therefore more favorable to sound healing. (*b*) It gives excellent exposure. (*c*) Postoperative hernia does not develop as the lateral pull of the abdominal muscles tends to close the incision. There is the disadvantage that transverse incisions take longer to perform and to close than the vertical type of incision. The modified Kocher incision is the most suitable incision in gallbladder surgery. This incision gives very complete exposure, with ease of working and a strong cicatrix. The ilio-inguinal incision of Whitelocke is the most suitable incision in all cases of acute or subacute appendicitis. If the operation is done by this method, a patient suffering from appendicitis or its complications, however severe, need not die of toxemia.

Annales des Maladies Vénériennes, Paris

21: 741-820 (Oct.) 1926. Partial Index

Treatment of Gangrene by Intra-Arterial Injection of Bismuth. H. Gougerot and J. Quénu.—p. 741.
Lesions of the Endocrine Glands and Congenital Syphilis. Barthélemy.—p. 747.
Bismuth and Camphor Diluted with Oil in Treatment of Syphilis. L. Bizard.—p. 754.

Bulletins de la Société Médicale des Hôpitaux, Paris

50: 1691-1718 (Dec. 10) 1926

Heredosyphilitic Tabes in an Adult. Lechelle et al.—p. 1691.
Chorea of Encephalitic Origin in a Young Child. P. F. Armand-Delille and J. Vibert.—p. 1694.
*Landry's Paralysis After Injection of Tetanus Antiserum. J. Lerond.—p. 1695.
Perinephritic Abscess and Aortic Murmur of Staphylococcic Origin. C. Flandin.—p. 1698.
Bronchopulmonary Spirochetosis from Thoracic Injury. A. Pellé.—p. 1701.
Primary Syphilitic Jaundice. P. Nicaud.—p. 1704.
Two Cases of Generalized Tetanus Cured by Serotherapy. H. Grenet and J. Delarue.—p. 1707.
*Vaccination with Diphtheria Anatoxin. M. Mozer.—p. 1711.
Case of Meningococcus Septicemia. V. de Lavergne and E. Carrot.—p. 1713.

Syndrome of Ascending Paralysis Following Injection of Tetanus Antiserum.—A man, aged 53, injured in a traffic accident, was given 10 cc. of nonpurified tetanus antiserum. Phenomena of serum sickness, such as generalized urticaria, pruritus and pain in the joints, appeared six days later. They persisted a few days, after which an acute ascending paralysis developed. There was scarcely any pain. The muscles of the limbs and, more especially, those of the face, were paralyzed; those of the trunk were not involved. An insignificant meningeal reaction may have preceded the facial paralysis. The patient recovered. Pagniez and Lerond see an analogy between this case and that of Léri and Boivin, in which ascending paralysis followed an injection of T. A. B. vaccine.

Twelve Months' Experience with Vaccination with Diphtheria Anatoxin in a French Hospital.—Systematic vaccination with diphtheria anatoxin was practiced in the seaside hospital for children in Berck, France, during a severe epidemic of the disease. Most of the children there are affected with surgical tuberculosis; some with rickets. The vaccination consisted of three injections, the first of 0.5 cc., the two following of 1 cc. each, all given within a month. First 896 children under the age of 13 were vaccinated; later, 474, including children over 13. While in the previous year sixty-seven cases of diphtheria had occurred, five with a fatal issue, in 1926 there were only fifteen cases and not one death. In 160 children the first injection was given a few days after a preventive injection of serum. Reactivation of the tuberculous foci was manifest in a case of lupus of the foot and in an apparently extinguished disease of the hip-joint. The local reactions proved to be connected with the anatoxin used, and were not of anaphylactic nature. Thus Arthus' phenomenon occurred in a certain number of children, all vaccinated with an anatoxin of identical preparation. Usually the local reaction was limited to a painful red swelling, lasting three or four days. Rise in temperature without an appreciable complication was noted in 63 per cent of the children.

Comptes Rendus de la Société de Biologie, Paris

95: 1305-1388 (Dec. 3) 1926. Partial Index

*Kupffer's Cells in Various Kinds of Jaundice. O. Kanner.—p. 1311.
*Fixation and Resorcin Reactions in Tuberculosis. A. Prunell.—p. 1319.
*Action of Colchicin on Shock. F. Arloing and L. Langeron.—p. 1321.
*Surface Tension and Volume of Blood Corpuscles. M. Duval.—p. 1330.
*Influence of Witte's Peptone on Healing. F. Roulet.—p. 1340.
*Inflammatory Hydrothorax and Insufflation Curve. P. Delmas-Marsalet.—p. 1349.
*Excretion of Urea in Worms. H. Delaunay.—p. 1357.

Biliary Pigmentation of Kupffer's Cells in Obstructive Jaundice.—Kanner's previous researches demonstrated that in obstructive jaundice the Kupffer cells of the human liver contain bilirubin derived from the blood. He did not observe this in other varieties of jaundice. He then suggested the theory that the biliary pigmentation of the cells was connected with an increase of cholesterol in the blood, which occurs in obstructive jaundice but not in any other kind. The author's recent investigations were made on dogs with experimental obstructive jaundice. Bilirubin was not present in Kupffer's cells, although Aschoff found it in hemolytic jaundice in the animal. Examination of the blood showed a notable increase of cholesterol in hemolytic jaundice, an insignificant increase in obstructive jaundice. He plans to undertake further researches to ascertain whether experimental cholesterolemia in dogs with obstructive jaundice causes bilirubin to appear in Kupffer's cells.

Fixation of Complement Reaction and Resorcin Reaction in Tuberculosis.—Prunell compared the results of the complement fixation reaction with those of the resorcin reaction in tuberculous and nontuberculous serums. Boquet and Nègre's antigen was used for the fixation reaction; Vernes' technic for the resorcin reaction. Vernes' technic consists in mixing 0.6 cc. of serum with 0.6 cc. of a 1.25 per cent solution of resorcin. The density of the mixture is evaluated by the photometric scale. A normal, clear serum corresponds to the marks ranging from 0 to 15; the serum from tuberculous patients ranks above 30. Highly flocculent serums from nontuberculous persons and slightly flocculent serums from tuberculous persons are found in the intermediate zone, between 15 and 30. The results proved the resorcin reaction to be more sensitive than the fixation reaction. The highest photometric values (100-115-160) were noted in advanced phases of tuberculosis in which the fixation reaction is sometimes negative. The lowest values (10 to 14) were observed in apyrexia or in pneumothorax with a favorable course, when the fixation reaction is often positive.

Action of Colchicin on Sensitization and Shock.—The effect of colchicin on sensitization and shock was studied by Arloing and Langeron in guinea-pigs. Colchicin injected three days before sensitization with ovalbumin averted or attenuated shock. It was without effect given just before sensitizations. It appeared slightly to aggravate shock, when it was given two weeks before or two weeks after sensitization. The experimental results agree with clinical observations, which teach that colchicum should not be administered close to the time of occurrence of an acute attack of gout. Given sufficiently long before an attack, colchicum is able to avert it, since the attack probably represents a protein shock. This also explains the favorable action of colchicum on urticaria.

Surface Tension and Size of Blood Corpuscles.—Duval centrifugalized defibrinated rabbits' blood together with sodium chloride solution (p_H 7.5). The surface tension of the latter had been reduced by means of amyl or octyl alcohols. The results indicated that a connection does not exist between the size of the corpuscles and the surface tension of the fluid in which they are bathed. The occurrence of hemolysis is not preceded by increase in the size of the corpuscles. The surface tension at which hemolysis occurs is lower with octyl alcohol than with amyl alcohol. Evidently, the agent which lowers the tension is a factor of hemolysis, as is the lowering itself.

Action of Witte's Peptone on Wound Healing.—Roulet made incisions in the backs of guinea-pigs and then injected 1 cc. of a 3 per cent solution of Witte's peptone, close to the wound. Cicatrization was more rapid than was observed in treatment with embryonal juice. The experiments confirm Carrel's statement that peptones have an effect on the phenomena of cellular nutrition. Witte's peptone is more easily prepared and is more stable than embryonal juice.

Inflammatory Nature of Hydrothorax Demonstrated by Insufflation Curve.—Delmas-Marsalet's conclusions are based on observations of the curve of insufflation in artificial pneumothorax. When the curve falls rapidly there is indication that effusion has developed in the insufflated pleura. Roentgenograms show that reduction of the pleural capacity from a slight hydrothorax causes an abrupt alteration in the insufflation curve. This is explained by interference of still another factor, namely, the decreased elasticity of the pleural and pulmonary tissues. Partial loss of elasticity in these tissues can occur only under the influence of an inflammation. Resistance to the gas introduced is thus enhanced, which is revealed by the rapid fall of the insufflation curve.

Excretion of Urea in Helminths.—Delaunay found 22 per cent of urea in the red corpuscles of sipunculidae, only 1 per cent in the intestinal tissue, and 0.5 per cent in the muscles and nephridia. So far, it has not been established whether the urea is formed in the corpuscles or originates in the plasma. It is known that the worm endures lack of oxygen well. It is possible that the urea of the corpuscles enables the animal to resist carbon monoxide or ammonia auto-intoxication.

Presse Médicale, Paris

34: 1585-1600 (Dec. 18) 1926

*The Ceremonies in Celebration of Laënnec's Centenary.

Laënnec's Centenary.—This issue is devoted to a description of the ceremonies in celebration of Laënnec's centenary.

34: 1633-1648 (Dec. 29) 1926

*Resistance to Insulin and Diabetes from Neutralization of Insulin. P. Mauriac and E. Aubertin.—p. 1633.
*Surgical Treatment of Vertigo Originating in the Endolymphatic Sac. G. Portmann.—p. 1635.
*Alarm Syndrome in Digitalis Treatment. L. Gallavardin.—p. 1637.
Pulmonary Tuberculosis and Sea Voyages. A. Ravina.—p. 1640.

Resistance to Insulin and Diabetes from Neutralization of Insulin.—Mauriac and Aubertin consider the factors neutralizing the action of insulin on glycemia. The part of the central nervous system is reflected in the fact that an intense emotion may promote a phase of resistance to insulin. A disturbance in the function of the pituitary, thyroid or suprarenals also creates conditions favoring resistance of the organism to the effect of insulin. Another mechanism of this resistance is neutralization of insulin. This occurs when insulin is adsorbed by colloids circulating in the body. Adsorption reactions explain the resistance to insulin in cirrhosis or insufficiency of the liver; also when the proteolytic ferments of the digestive juice are increased. It is evident that in many cases diabetes is due not to lesions of the pancreas but to inactivation of its hormone.

Surgical Treatment of Vertigo from Changes in the Endolymphatic Sac.—Portmann found that vertigo is frequently due to high pressure within the endolymphatic sac. The phenomenon may be of intracranial origin, due to compression of the sac by lesions of the meninges, cerebellum or lateral sinus. Or a local lesion, such as serous inflammation of the sac, may increase the pressure therein, and, consequently, the pressure on the auditory nerves. This produces Ménière's disease. Therefore decompression of the internal ear may succeed where medical treatment fails. The operative technic for opening the endolymphatic sac is described. Two patients suffering from severe vertigo recovered and resumed their occupation after this operation.

Alarm Syndrome in Treatment with Digitalis.—Sudden death in patients with grave disease of the heart is usually due to ventricular fibrillation. It is preceded by changes in the cardiac rhythm. It appears that the rhythmic syndrome is frequently provoked or aggravated by even small doses of digitalis. Coupled rhythm, with tendency to extrasystolic impulses or to short tachycardiac fluttering is the alarm syndrome, warning that digitalis should be used very cautiously.

Revue Franç. de Gynécologie et d'Obstét., Paris

19: 493-540 (Sept.) 1926

*Expectation in Cases of Contracted Pelvis. S. Odagesco.—p. 493.

Expectant Treatment in Contracted Pelvis.—Odagesco emphasizes that in the case of a slightly contracted pelvis obstetric intervention should not take place before labor is in progress. In his statistics, parturition was spontaneous in 70 per cent of women with this type of pelvis. Seventy women with a flat rachitic pelvis gave birth to living children after from eight to forty-seven hours of labor. He warns against the practice of prophylactic cesarean section. The method of low cesarean section allows a prolonged period of expectation while labor is going on. This operation is the method of choice even in case of infection. Pubiotomy is an operation of necessity; the indications for it are limited.

Schweizerische medizinische Wochenschrift, Basel

56: 1161-1184 (Dec. 4) 1926

Cesarean Section. E. Frey.—p. 1161. C'td.
Umbilical Hernias in Children. N. Seifert.—p. 1172.

Policlinico, Rome

33: 1701-1738 (Dec. 6) 1926

"Sanocrysin" Treatment. G. Mendes.—p. 1701. C'td.
*Reduction en Masse of Incarcerated Hernia. R. Redi.—p. 1704.
Intestinal Occlusion by Ascarids. A. Bacheca.—p. 1707.

Reduction en Masse of Incarcerated Hernia.—Redi reports a case of incarcerated inguinal hernia reduced *en masse*. The patient had frequently reduced his hernia before, but denied having done it at that time. It is possible that the hernial sac had become freely movable from the previous attempts.

Riforma Medica, Naples

42: 1153-1176 (Dec. 6) 1926

Myoma and Exophthalmic Goiter. D. Giordano.—p. 1153.
Vegetative System and Pseudotuberculosis. A. Spanio.—p. 1156.
Biliary Fistula. O. Rago.—p. 1159.
Leukocytes and Hepatic Diseases. V. Giudiceandrea.—p. 1161.
Diathermy in Arthritis. F. D'Amore.—p. 1171.

Archivos Chilenos de Pediatría, Santiago

3: 292-412 (Sept. and Oct.) 1926

*Tuberculosis Mortality in Chile. A. C. Sanhueza.—p. 306.
Calmette's Tuberculosis Vaccine in Chile. O. Fontecilla.—p. 312.
Immunology in Tuberculosis. J. Schwarzenberg Lobeck.—p. 320.
Radiology of Pulmonary Tuberculosis. L. Opazo and T. Kausel.—p. 331.
Diagnosis of Tuberculosis in Children. A. Scroggie.—p. 344.
"Sanocrysin" in Tuberculosis. B. Bambach and R. Pomar.—p. 365.
*Asthma in Children. S. Muzzo Pons.—p. 379.
Visiting Nurses in the Campaign Against Tuberculosis. J. Bernier.—p. 384.
Polyclinics in the Care of the Tuberculous. E. Cienfuegos B.—p. 394.
Infantile Tuberculosis at Valparaiso. R. Aldunate.—p. 400.
Statistics on Infantile Tuberculosis in Chile. F. Casarino and J. Schwarzenberg.—p. 406.

Tuberculosis in Chile.—If deaths erroneously assigned to other diseases are included, states Sanhueza, the tuberculosis death rate in Chile reaches 44 and in some towns as high as 70 per 10,000 of population. In Chiloé Province, however, it is only eight per 10,000. In Chile only 20 per cent of the death certificates are actually signed by physicians.

Multiple Causes of Asthma.—Muzzo studied the underlying cause in thirty-five cases of infantile asthma. In eleven he found frank tuberculosis; in twelve, enlarged tracheobronchial glands; in three, congenital syphilis; in six, a history of anaphylaxis; in four, exudative diathesis; in three, colitis; in two, florid rickets; in one each, persistent thymus, thyroid insufficiency, ovarian insufficiency and adenoids with enlarged tonsils. In one case the symptoms were caused by a foreign body in the pharynx and in another, by opium poisoning. Before attempting any treatment for asthma, one must delve into the cause.

Archivos Españoles de Pediatría, Madrid

10: 705-768 (Dec.) 1926

*Vincent's Angina in Children. J. Muñoz Seca.—p. 705.
Infant Welfare. F. Cirajas.—p. 718.

Vincent's Angina in Children.—Out of fifty-two cases of Vincent's angina seen by Muñoz, only four were in adults. In the others the age varied from 2 to 15 years. Fully 72.5 per cent of the patients were from 2 to 6 years old. This seems to argue against the alleged rôle of dental caries, nor did vitamin deficiency or difficult teething seem to have much to do with the disease. The localization was divided about equally between the two sides; only two cases were bilateral. The prognosis is rather good. In case conservative local treatment fails, intravenous injection of bismuth seems to be the method of choice.

Boletín de la Soc. de Obstet. y Ginec., Buenos Aires

5: 501-552 (Nov. 28) 1926

*Inoperable Cancer of the Cervix. A. J. Pavlovsky.—p. 501.
*Fetal Giantism. J. Bazán and A. Brea.—p. 516.
Cesarean Section in a Case of Fractured Pelvis. O. Jürgens.—p. 522.
Uterine Myoma with Colloid Degeneration. S. E. Bermann.—p. 526.
Pernicious Vomiting. N. Palacios Costa.—p. 528.

Radium in Inoperable Cervical Cancer.—Pavlovsky's two patients suffered from inoperable cancer of the cervix of the uterus. The result was excellent eighteen months after treatment with radium and roentgen rays in one case and with radium, surgery and roentgen rays in the other. Local eosinophilia existed in both. Castaño mentioned four cases treated with radium, in which the cure had lasted from eight to twelve years. He also has many three and four year cures. In operable cancer he favors radium followed by surgery, followed in turn by roentgen-ray treatment, beginning fifteen days after the operation. In inoperable cases, deep roentgen-ray therapy is tried, followed immediately by radium in a single massive dose (50 millicuries as a maximum). Nicholson knows of one case cured with radium fifteen years ago; a rectovaginal fistula persists.

Living Giant Baby Delivered with Forceps.—The living child delivered with forceps by Bazán and Brea weighed 6,300 Gm. (about 14 pounds) and was 61 cm. (24 inches) long. In 1910 Brisard delivered a live baby weighing 5,900 Gm. (13 pounds); this was the first infant of this size that he had seen in 20,000 confinements. New-born infants weighing more than 6,000 Gm. are exceedingly rare.

Prensa Médica Argentina, Buenos Aires

13: 657-692 (Dec. 20) 1926

Pathogenesis of the Hilear Dance. M. Miranda Gallino.—p. 657.
*Study of Hepatic Function, Especially with Azorubin. M. Zinny.—p. 665.
*Presence in Malignant Growths of a Substance Resembling Insulin. A. H. Roffo and L. M. Correa.—p. 668.
Volhard's Water Test in Eighty Children. A. Casaubon and P. Winocur. —p. 670.
A Case Presenting the Pontile Syndrome. O. Luque and R. L. Weskamp. —p. 676.
*The Leprosy Problem in Argentina. J. L. Carrera.—p. 680.

Azorubin as a Liver Test.—Among drugs used to determine the functional capacity of the liver, Zinny prefers azorubin. It is innocuous and stains strongly. By combining it with magnesium sulphate, the bile conditions are also determined. The intravenous dose of azorubin is 4 cc. of a 1 per cent aqueous solution. The magnesium (50 cc. of a 25 per cent solution) is instilled into the duodenum five minutes before the azorubin injection. In acute catarrhal jaundice the rate of discharge parallels the course of the disease. In three cases of chronic jaundice no dye was discharged. In gallstones the excretion diminishes after a colic, increasing gradually later on. Subsequent to removal of the gallbladder, the rate again becomes normal. In normal subjects, azorubin appears in the duodenum after from thirty-five to fifty minutes. When injected together with magnesium, it appears twenty minutes earlier.

Presence in Malignant Tumor of a Substance Resembling Insulin.—Roffo and Correa isolated from spindle cell sarcomas in white rats a substance which had the effect of lowering the blood sugar. About 500 Gm. of the malignant tissue yielded usually from 8 to 12 units. In rabbits weighing 2 Kg., 1 cc. caused convulsions and a frank hypoglycemia after one and one half hours.

Leprosy in Argentina.—Out of 192 patients with leprosy in the Muñiz Hospital, twenty-nine surely or very probably were foreign-born or had contracted the disease abroad. The others came from every province in the country. The parents were leprous in thirty-one cases, the marital partner in four; twenty-two had forty-three leprous brothers and sisters, a great many at large; one had a leprous child, and in four there was leprosy in distant relatives. One was a cook who had had leprosy for sixteen years and shared her bed with a niece. In other cases an erroneous diagnosis of syphilis had been made. Mistaken diagnoses reached 58 per cent in the group.

Revista de Medicina y Cirugía de la Habana, Havana

31: 687-709 (Dec. 25) 1926

*Treatment of Typhoid in the Tropics. R. Avello.—p. 687.
Sources of Vitamins. R. de Velazco y Castellanos.—p. 694.

Treatment of Typhoid in the Tropics.—In hot climates, Avello warns, a typhoid patient should not be fed milk or other temperate zone foods. These are liable to aggravate existing symptoms and cause real fermentation. The juices of tropical fruits, such as the pineapple and the orange, offer excellent substitutes.

Revista de Medicina, Rosario de Santa Fé, Argentina

1: 150-186 (Dec.) 1926

*Perforated Jejunal Ulcer. A. Zeno.—p. 150.
Action of Insulin in Vitro. T. J. C. Combes.—p. 158.
Diathermy in Treatment of the Internal Ear. A. Padin.—p. 162.
Ovarian Fibroma. Thrombophlebitis of Uterus and Ovary. J. Infantozzi.—p. 168.
Uses of Digitalis. S. M. Neuschlosz.—p. 175.

Perforated Jejunal Ulcer After Operation for Perforated Duodenal Ulcer.—Zeno describes in detail one of his cases of secondary jejunal ulcer and perforated gastric and duodenal ulcer. An emergency operation was performed for perforated duodenal ulcer and the patient recovered, but five months later he was obliged to seek reoperation because of the persistence of his symptoms. A jejunal ulcer was now found on the posterior aspect of the stoma. A subphrenic abscess developed. After drainage, the patient finally recovered. About eight months later he returned again, complaining of the same symptoms. After separating the previous anastomosis, another jejunal ulcer was discovered, this time on the anterior surface. Inside the ulcer two linen threads were found. The patient recovered. Peptic ulcer seems less common in Argentina than in the United States or Europe.

Archiv für Psychiatrie und Nervenkr., Berlin

79: 317-488 (Jan. 15) 1927

Spectrophotographic Examination of the Cerebrospinal Fluid in Ultraviolet Light. W. Jacobi.—p. 317.
Microchemical Demonstration of Potassium and Calcium in the Histologic Section. W. Jacobi and W. Keuscher.—p. 323.
Organic Symptoms in Neuropathic Conditions. N. Toporkoff.—p. 327.
An Object in Life as a Psychotherapeutic Factor. J. Kollarits.—p. 331.
The Multimetameric Structure of the Male Sex Glands and Adnexa and Their Innervation. M. Lapinsky.—p. 346.
The Bromide Method of Testing Permeability. F. K. Walter.—p. 363.
Localization of the Calculating Functions. S. E. Henschen.—p. 375.
The Psychic Action of Cocaine. A. Jacobi.—p. 383.
Threat and Orientation Reflexes. J. O. Gilula.—p. 407.

Archiv für Verdauungs-Krankheiten, Berlin

39: 171-324 (Nov.) 1926

Disturbances After Operations for Ulcer. G. Pfeffer.—p. 171.
Fatal "Parenchymatous" Gastro-Intestinal Hemorrhage. K. Körner.—p. 177.
Fractional Aspiration of the Stomach. L. A. Jakobson and D. A. Scheweliuchin.—p. 187.
*Diastase in Serum and Urine. E. Cohn.—p. 199.
Gastric Ulcer and the Parathyroids. E. Palier.—p. 212.
Diseases of the Gallbladder and Secretion of Stomach and Pancreas. G. Hechtmann.—p. 219.
*Allergy in Hypertension and Arteriosclerosis. C. Funck.—p. 249.
*Peptone Treatment of Diarrhea. R. A. Luria.—p. 256.
Action of Drugs on Gastric Secretion. V. Michelson and I. E. Neumark. —p. 275.

Diastase in Serum and Urine.—Cohn declares that Wohlgemuth's method of determination of diastase in the urine is the simplest and most reliable function test of the pancreas. The elimination of diastase was increased in 28.9 per cent of the patients with diseases of the gallbladder and in 25 per cent of patients with catarrhal jaundice.

Allergy in Hypertension and Arteriosclerosis.—Funck believes that food allergy plays an important rôle in the pathogenesis of hypertension and arteriosclerosis. The disturbance of the cholesterol metabolism is coordinated with the pathologic changes which make it possible for products of protein cleavage to enter the blood circulation.

Peptone Treatment of Diarrhea.—Luria made an intramuscular injection of 5 cc. of a 5 per cent solution of Witte peptone daily. One injection was sufficient to stop the diarrhea in twenty-three patients—among them one poisoned with mercuric chloride. In twenty-one patients from two to three injections were necessary. Two of these patients suffered from ulcerous colitis and four from ulcerous proctosigmoiditis. He failed in eighteen patients—some of them with tuberculosis of the intestine.

Biochemische Zeitschrift, Berlin

178: 245-492 (Nov. 20) 1926

*Colloid Chemical Urine Examinations. F. V. von Hahn.—pp. 245 to 269 and 277 to 285.
Effect of Alkaline Salts on the Urinary Ratio C: N. T. Taslakowa.—p. 270.
Effect of Sodium Chloride, Bromide and Iodide on the Urinary Ratio C: N. M. Watanabe and T. Taslakowa.—p. 286.
*Immune Fermentative Processes. E. Kupelwieser.—p. 298.
*Idem. E. Kupelwieser and E. Navratil.—p. 319.
*Idem. E. Kupelwieser and K. Singer.—p. 324
Idem. K. Singer.—p. 332.
*Physiology of the Glands. H. Nakao.—pp. 342 and 382.
Idem. K. Beyeler.—p. 351.
*Formation of Lactic Acid in Muscle Extracts. O. Meyerhof.—pp. 395 and 462.
Determination of Phosphorus in Muscle Extracts. K. Lohmann and L. Jendrassik.—p. 419.
Dissociation Constant of Hexosediphosphoric Acid. O. Meyerhof and J. Suranyi.—p. 427.
Hydrolysis of Glycogen. K. Lohmann.—p. 444.

Colloid Chemical Examinations of Urine.—Von Hahn confirmed Donnan's statement that there exists a numerical relation between specific gravity and surface activity of human urine. In women the surface activity increased as the amount of urine decreased. The men presented medium surface activity with a maximum volume. There was no regular relation between color intensity, optic rotation of the urine or sedimentation speed of erythrocytes and surface activity. It was not possible to confirm Lichtwitz' statement that colloids decrease the surface tension of urine and increase its viscosity. Stalagmons were not excreted regularly by the same person. In urine with high viscosity there was marked rotation to the left.

Immune Fermentative Processes.—In their studies of the Abderhalden reaction Kupelwieser, Navratil and Singer used guinea-pigs that had previously been treated with inactivated cattle serum or horse serum. The serums were obtained from the guinea-pigs during a condition of antianaphylaxis. Horse and cattle serums were used for antigen (substratum). Human serum in pregnancy and serum of antianaphylactic guinea-pigs did not effect fermentative decomposition of placenta proteins or the protein of horse or cattle serum. The authors describe a modification of van Slyke's apparatus for determination of primary aliphatic aminonitrogen. This they used for determining amino groups in decomposition experiments in liquid systems, consisting of a mixture of immune serum and antigen serum. The result did not suggest any immune fermentative proteolytic processes.

Physiology of the Glands.—Nakao studied the excretion of urine, the effect of specific diuretics and the influence of the vegetative nervous system in normal rabbits and in animals after section of both splanchnic nerves. The chlorine concentrations of the blood were determined before and after injection of a soluble theophyllin preparation. Normal rabbits showed a greater increase of blood chlorides and a more marked diuresis, after injection of theophyllin, than did animals without splanchnic nerves. Specific diuretics stimulate the vegetative centers, and the permeability of the tissues for electrolytes is increased. Under physiologic conditions the carbon dioxide capacity of normal rabbits and of splenectomized animals was the same, when the oxygen content of the air was decreased.

Enzymatic Formation of Lactic Acid in Muscle Extracts.—Meyerhof isolated a lactic acid ferment from frog and rabbit muscle and determined glycolysis in aqueous solutions according to different methods. The ferment solution, which was almost free from carbohydrates, formed lactic acid from added starch and glycogen during several hours. The stability of the ferment was low. He isolated a saccharide from the muscles of a frog, which like amylotriose isolated in like manner, could not be split into lactic acid. Glycogen, starch, amylopectin, amylose, trihexosan and dihexosan, when in the same concentration, were split into lactic acid with the same velocity by the ferment. Fermentative hexoses were glycolysed only slightly. Hexosediphosphoric acid was usually decomposed by fresh muscle extracts more slowly than were the polysaccharides.

Deutsches Archiv für klinische Medizin, Leipzig

153: 1-128 (Nov.) 1926

Amino-Acids in Blood and Cerebrospinal Fluid. E. Wiechmann and M. Dominick.—p. 1.
Viscosimeter. P. Wiemer.—p. 19.
*Blood Pressure in Different Vascular Regions. M. Mandelstamm.—p. 28.
*Excessive Albuminuria. W. Stepp and F. Peters.—p. 53.
*Urine Reaction and Alveolar Carbon Dioxide Tension. W. H. Jansen and H. J. Karbaum.—p. 65.
*Carbon Dioxide Combining Power and Reaction of the Blood. W. H. Jansen and H. J. Karbaum.—p. 84.
Vital Granulation of Erythrocytes. T. Istomanowa.—p. 106.

Blood Pressure in Different Vascular Regions.—Mandelstamm found that a higher systolic blood pressure in the arteries of the lower extremities (compared with the brachial artery) is more characteristic of aortic insufficiency than of arteriosclerosis. He observed it in four fifths of the patients with aortic insufficiency and in only one fourth of the arteriosclerosis patients.

Excessive Albuminuria.—Stepp and Peters report a unique case of albuminuria, in which the albumin was estimated at about 28 per cent. The patient was an old woman with gross arteriosclerosis of the kidneys and cardiac decompensation. She had been treated a few days before with a theobromine preparation. The specific gravity of the urine was 1.1122—another value unknown in the literature. The urine contained 0.32 per cent of chlorides (as sodium chloride), the blood 0.734 per cent. The observation can hardly be explained by any theory except that of reabsorption of water in the kidney.

Urine Reaction and Alveolar Carbon Dioxide Tension.—Jansen and Karbaum confirm an increase in the alveolar carbon dioxide tension during and after gastric secretion. It appears during intestinal digestion and is partly determined by the intermediary metabolism. For instance, a carbohydrate meal causes the alkalinuria curve to rise steeply and to a great height. Digestion of fat does not produce any alkalinuria.

Carbon Dioxide Combining Power and Reaction of the Blood.—Jansen and Karbaum found that the hydrogen ion concentration of the blood may follow the changes in the alkali reserve as well as the changes in the arterial carbon dioxide tension. Even under the physiologic conditions of digestion, respiration does not prevent changes in the blood reaction ranging from 7.30 to 7.42 p_H.

Deutsche medizinische Wochenschrift, Berlin

52: 2017-2060 (Nov. 26) 1926

*Chemotherapy. W. Roehl.—p. 2017.
Dangers of Smoking. Fürbringer.—p. 2021.
*Blood Clotting in Cancer. H. Bock and C. Rausche.—p. 2025.
*Porphyrins and the Colors of Feathers. I. Krumbiegel.—p. 2026.
Postoperative Jejunal Ulcer. E. Koppenstein.—p. 2027.
Intravenous Injections. E. von Thurzó.—p. 2028.
Etiology of Mycosis Fungoides. S. R. Brünauer.—p. 2030.
Meinicke Test on the Cerebrospinal Fluid. L. Mendlowicz.—p. 2030.
Radiotherapy in Gynecology. L. Schoenholz.—p. 2031.
Nongonorrheal Leukorrhea. H. Runge.—p. 2035.
Pelvic Phlebitis in Women. F. Benzel.—p. 2036.
Shortening Labor. W. Framm.—p. 2037.
Sex Cycle and Metabolism. L. Zuntz.—p. 2040.
Organization of First Aid in America. P. Frank.—p. 2040.
Health Advice Before Marriage. J. Schwalbe.—p. 2041. C'en.
International Cancer Meeting at Lake Mohonk. F. Blumenthal.—p. 2043.
The German Hospital in London. E. Bock.—p. 2044.

Chemotherapy.—While pharmacology deals only with the action of a substance on a single organism or its parts, chemotherapy always deals with two organisms: the parasite as well as its host. Roehl is opposed to the current opinion that chemotherapeutic drugs act on the parasites only indirectly, by influence on the reaction of the host, consisting, perhaps, in a production of enzymes or immune bodies. It is true that trypanosomes keep their motility in vitro in a solution of atoxyl. Yet the conclusion as to an indirect action is premature. For instance, if the drug acts only on the reproductive apparatus of the parasites, it is acting directly, although the effect cannot be seen in a short time in vitro—just as it requires days in vivo to see the result. Such parasites acted on by various drugs in vitro do not cause infection

in a new host. The acquired specific resistance of parasites against drugs—evident in vivo as well as in vitro—is another indication of direct action on the parasites. Reduction of some drugs—for instance, of atoxyl, or oxidation of others, such as arsphenamine—is necessary to produce the full effect. The action of "Bayer 205" is probably due to interaction by means of a "sulpho" group with some basic constituents of the protoplasm of the parasites. The "sulpho-acid" is an essential factor. The organic acid combined with it in the drug determines its elective affinity to trypanosomes or spirochetes. Basic dyes—for instance, those of the triphenylmethane, acridin or oxazine series—cause disappearance of the blepharoplast. The direct parasitotropic action of quinine is probable. Iodine seems to be the only drug which, in syphilis and sporotrichosis, probably acts only indirectly. It does not cure the sporotrichosis transmitted to animals—perhaps because there it circulates in another binding than in man.

Blood Clotting in Cancer.—Bock and Rausche modified the Fonio method of determination of blood clotting as follows: Increasing amounts of a 2 per cent solution of magnesium sulphate (from 1 to 10 drops) are distributed in ten test tubes. One cubic centimeter of blood is added to every test tube; the tube is then shaken. The mixture is left for two hours at room temperature. The lowest number of drops of the magnesium sulphate solution which inhibits blood clotting serves as its index. Healthy persons have an index of from 3 to 5. Patients with ulcers of the stomach or duodenum and those with jaundice have an index of from 1 to 3. The blood from cancer patients with few exceptions required more magnesium sulphate (average 7 drops) to inhibit clotting.

Porphyrins and the Colors of Feathers.—Krumbiegel recalls the peculiar observations made by Verreaux in 1871 on certain African birds *(Musophagidae)*. The latter author reported that the feathers of these birds lose their red color in the rain. Later authors were unable to confirm this observation, until Krumbiegel found that the presence of very slight traces of ammonia in the water is necessary for solution of the dye. H. Fischer has found that this dye—called turacin—is a compound of copper with uroporphyrin; it is not poisonous, because it does not sensitize to light. This suggests the therapeutic use of copper in porphyrinuria and perhaps of porphyrins in copper poisoning. He intends to investigate whether an increase in porphyrin could be found in the birds before molting.

Klinische Wochenschrift, Berlin

5: 2241-2288 (Nov. 26) 1926

*Pathogenesis of Nausea. W. Crodel.—p. 2241.
*Decrease in Syphilis and Arsphenamine. J. Jadassohn.—p. 2248.
*Insensible Perspiration in Athletics. Moog and Schwieder.—p. 2252.
*Pathogenesis of Lasègue's Sign. F. Lindstedt.—p. 2254.
Epithelial Tumors of the Cornea. L. Poleff.—p. 2256.
*Epinephrine Test and Cultures of the Blood. S. Tannhauser.—p. 2258.
Active Substances in the Urine in Tuberculosis. Bachmann.—p. 2258.
The Capillaries in Hemorrhagic Diatheses. F. von Bernuth.—p. 2262.
Serodiagnosis of Syphilis in the Cadaver. C. Krauspe.—p. 2263.
*Oxidation Quotient of Urine. H. Müller.—p. 2263.
*Lactic Acid Fermentation in the Blood. A. Abraham and S. Friedberg.—p. 2264.
Otogenic Tetanus. H. Meseck.—p. 2265.
*Phototherapy in Internal Diseases. L. Pincussen.—p. 2266.
Etiology of Cancer. W. Caspari.—p. 2268.

Pathogenesis of Nausea.—Crodel denies the assertion of a dominating influence of the vestibular apparatus in the pathogenesis of seasickness. The upward and downward movements ("vertical duction") cause a direct irritation of the visceral nerves, especially of the heart and diaphragm, at the turning points of the duction.

Decrease in Syphilis and Arsphenamine.—Jadassohn reports the results of his inquiries made in different European countries. It seems to be an unquestionable fact that the frequency of syphilitic infection has been decreasing since 1919, while the frequency of gonorrhea has remained stationary or has increased. The large majority of specialists are of the opinion that the diminished frequency of syphilis is due to arsphenamine treatment.

Insensible Perspiration in Athletics.—In moderately trained students Moog and Schwieder found a loss of weight of from 80 to 110 Gm. after they had run races of 400 meters and a loss of from 500 to 900 Gm. after 10-kilometer races. The loss was much greater in swimming races: from 50 to 80 Gm. after 100 meters and from 350 to 1,200 Gm. after 1 kilometer. Part of this loss is due to the increased perspiration induced by the hyperthermia of the contestants. Although this attempt at physical regulation of the temperature is necessarily a failure in water, the otherwise useful reflex perspiration occurs.

Pathogenesis of Lasègue's Sign.—Lindstedt believes that Lasègue's phenomenon (pain on dorsal flexion of the extended lower extremity), as well as other pains in sciatica, is due to irritation of myalgic soft parts, not to stretching of the nerve.

Epinephrine Test and Cultures of the Blood.—Tannhauser recommends withdrawing blood for cultures from fifteen to twenty minutes after an injection of epinephrine. By this means, the organisms are probably expelled from the contracting spleen.

Oxidation Quotient of Urine.—Müller calls "vacat oxygen" the amount of oxygen which would be taken up by the various excreted substances for a complete oxidation. He uses the term "oxidation quotient" for the ratio between the excreted nitrogen and the "vacat oxygen." He believes that in disturbances of oxidative processes, these figures might give a more exact estimate of the condition than the nitrogen-carbon quotient.

Lactic Acid Fermentation in the Blood.—Abraham and Friedberg found that defibrinated human blood, buffered to a p_H of 8, produces lactic acid from starch and glycogen. The cleavage of these substances was, however, not as marked as that of dextrose.

Phototherapy in Internal Diseases.—Pincussen found a decrease in blood potassium during and after irradiation. The elimination of potassium by the urine was increased. When irradiating tadpoles, erythrocytes or enzymes, the time necessary to cause injury differed according to the presence of various salts. He was able to study the effect of a series of monovalent and bivalent anions and kations. Potassium increased the injurious effect of light; calcium diminished it. Among the anions, iodine had the most injurious effect. He obtained improvement in diabetic patients sensitized with eosin and treated with light. The amount of uric acid (in man) or allantoin (in animals) excreted decreases after irradiation. In its place there is found an oxaluria. Moderate irradiation lowers the nitrogen excretion; strong irradiation increases it. Proteolytic enzymes appear in the blood. Administration of photosensitizing substances augments this effect still further. Potassium iodide combined with irradiation causes an increase in metabolism comparable with that in hyperthyroidism.

Medizinische Klinik, Berlin

22: 1869-1910 (Dec. 3) 1926

*Cancer of Pleural Cavity. R. Schmidt.—p. 1869.
Surgery of Cholelithiasis. Finsterer.—p. 1874.
The Sleep Center and Dreams. O. Pötzl.—p. 1877. C'td.
Symposium on the Treatment of Hyperthyroidism. H. Curschmann and Enderlen.—p. 1881.
*Reflexes in Children. C. Leiner.—p. 1882.
*Camphorated Oil in Hemoptysis. A. Arnstein and L. Wischnowitzer.—p. 1884.
*Fetal Asphyxia During Labor. E. Spier.—p. 1885.
*The Generative Organs and Insulin. O. O. Fellner.—p. 1886.
Experimental Congenital Syphilis. R. Fischl.—p. 1888.
The Daily Round. H. Kritzler-Kosch.—p. 1890. C'tn.
Treatment of Roentgen-Ray Ulcers. J. Fabry.—p. 1891.
Ganglion and Injury. Sonntag.—p. 1893.
Chronic Hypertension and Its Treatment. E. Hesse.—p. 1894.
Gynecology. W. Liepmann and G. Müggenburg.—p. 1895.
Hygiene of Clothing. E. Jaeger.—p. 1908.

Cancer of Pleural Cavity.—Schmidt publishes a detailed diagnostic study on cancer of the bronchi, secondary tumors of the lung and malignant tumors of the pleura and mediastinum. He finds that such tumors occur with especial frequency in families remarkable for health and longevity. Many of the patients have a high "birth number": a tenth child is in greater danger than a first—a predisposition factor which seems to apply to pernicious anemia and leukemia also.

If a tumor causes compression or thrombosis of the veins, the face or one extremity becomes edematous. Marked stasis in the jugular veins, with absence of pulsation, speaks for thrombosis. Since lung tumors are frequently situated in the upper lobe, percussion of the base of the lungs may not elicit dullness. Hemilateral weakness of respiratory murmurs with normal percussion sounds is highly suggestive of stenosis of a bronchus. Metastases in the brain and bones are frequent, especially with a small primary tumor. Swelling of lymph nodes (supraclavicular, axillary and inguinal) is frequent. Profuse night sweats occur in cancer of the lungs as well as in tuberculosis. Signs of compression speak for malignancy of the process; displacement of the heart speaks rather against it.

Reflexes in Children.—Leiner believes that a diagnostic blunder is being made in more than 30 per cent of the children operated on for appendicitis. Pneumonia is very frequently mistaken for it, since that also begins suddenly with fever, vomiting and pains localized in the abdomen. He recommends the use of the lower abdominal reflex in differential diagnosis: It is absent on the right side in appendicitis, while it occurs vigorously in pneumonia. Absence of all the abdominal reflexes is diagnostically important in the beginning of a pneumococcus peritonitis. In intestinal intussusception the abdomen is distended and the reflexes absent, while in dysentery the abdomen is more apt to be concave and the reflexes are present. If the child is in the horizontal position on the abdomen without a pillow under the head and with the arms parallel with the thorax, and the skin is irritated by drawing a darning needle or a blunt instrument downward between the spine and shoulderblade, a distinct contraction of the dorsal muscles along the spine may be seen. The reflex is rare in infants. It is absent on the side in which pleurisy and pneumonia exist. The local absence of this reflex is especially valuable in the diagnosis of perinephritis. If we blow suddenly into the face of an infant, a reflex movement identical with Moro's reflex is produced: the arms of the infant are symmetrically extended and then return to the previous position. Persistence of the reflex after the first half year of age points to a neuropathic condition and sometimes to a cerebral lesion. It was absent in the first half year in an infant with myxedema.

Hemostasis by Camphorated Oil.—Arnstein and Wischnowitzer investigated the mechanism of the hemostyptic action of subcutaneous injections of camphorated oil in hemoptysis. They found an acceleration of blood clotting, lasting for several hours. Changes in the blood pressure were not a factor.

Fetal Asphyxia During Labor.—Spier observed the ominous bradycardia and arrhythmia in a fetus whose head had not yet entered the upper strait of the pelvis. The rhythm improved about thirty seconds after the mother was given an intravenous injection of strophanthin. Anesthesia of the mother moderated the strong labor pains, and the child's heart sounds remained normal for another hour when the indication for a low forceps was given and utilized.

Generative Organs and Insulin.—Fellner isolated from the ovary a considerable amount of a substance which he regards as identical with insulin. It prevents epinephrine glycosuria in rabbits. He points out that some rabbits do not react with glycosuria to an injection of 1 mg. of epinephrine. Other rabbits—especially those fed with beets—eliminate sugar spontaneously. Further experiments have given a paradoxic result: the same hormone which prevents epinephrine glycosuria seems to cause a renal glycosuria when administered alone. This phenomenon may be the cause of pregnancy glycosuria.

Münchener medizinische Wochenschrift, Munich

73: 2009-2056 (Nov. 26) 1926

*Tuberculous Meningitis After Injury. F. Schultze.—p. 2009.
Synthetic Menthol. F. Flury and H. Seel.—p. 2011.
*Agranulocytosis in Lymphogranuloma. R. H. Jaffé.—p. 2012.
Bile Resembling Milk of Lime. J. Volkmann.—p. 2014.
Recurrens Spirochetes in the Brain in General Paralysis. F. Jahnel.—p. 2015.
*Malaria Treatment of Early Syphilis. F. Bering.—p. 2016.
Injections in Heart Diseases. E. Kaufmann.—p. 2018.
*Tuberculosis of Epididymis. K. Fromlet.—p. 2019.
*Psychotherapy in Organic Diseases. Staudacher.—p. 2020.
Vaccine Treatment of Enteritis. W. Böhm.—p. 2022.
Epidemic Poliomyelitis. K. Ochsenius.—p. 2023.
Expert Testimony on Paternity. J. Guggenberger.—p. 2023. C'td.
A Gastroscope. A. Hübner.—p. 2027.
Cisterna Puncture. C. Garkawi.—p. 2028.
Atrophying Lipomatosis. F. Strieck.—p. 2029.
Routine Primary Suture in Appendectomy. Kulozik.—p. 2030.
Economic Aspects of Psychotherapy. W. Eliasberg.—p. 2031.
*Analytic Control in Nutrition Experiments. R. Berg.—p. 2031.
*Blunt Injuries to the Abdomen. A. Krecke.—p. 2035.
Professional Organization. F. Prausnitz.—p. 2036.
Medicine and Humanistic Study. G. Hauser.—p. 2037.
History of Alcoholism. P. Hildebrand.—p. 2037.

Tuberculous Meningitis After Injury.—Schultze shows the difficulties in giving expert testimony dealing with a causal connection between an injury and the development of a tuberculous meningitis.

Agranulocytosis in Lymphogranuloma.—Jaffé reports the history of a woman in whom a large group of swollen cervical lymph nodes had been removed five years before. The woman came to the hospital with signs of a pararectal abscess and of agranulocytosis (1,000 leukocytes, 89 per cent of which were lymphocytes). The blood picture improved considerably after surgical treatment of the abscess and of an ulcer of the rectum. About one month later the leukocyte count was 7,600, with 59 per cent neutrophils. Even the marked shifting to the left (half of the neutrophils had rod-shaped nuclei at the beginning of the improvement) regressed. Three months after her first admission the woman became sick again, the agranulocytosis was pronounced, and the patient died after a few days. Lymphogranulomatosis of the intestine was found at necropsy.

Malaria Treatment of Early Syphilis.—Bering makes a cisterna puncture at the end of the second year of the treatment of syphilis. If the cerebrospinal fluid shows pathologic changes, he advises a malaria treatment. He reports success in his 460 cases.

Tuberculosis of Epididymis.—Fromlet reports good results from roentgen-ray treatment of tuberculous epididymitis.

Psychotherapy in Organic Diseases.—After hypnotic treatment Staudacher observed a considerable improvement in a patient suffering from chronic trachoma and increased efficiency in another patient with nephritis and hysterical symptoms, including amaurosis. The improvement in the former case can be explained by an action on the vasomotor nerves. The author points out that a similar success in organic diseases is not impossible to quack measures. Psychotherapy is a valuable aid in the fight against quackery.

Analytic Control in Nutrition Experiments.—Berg finds that the Gerson treatment of tuberculosis, as studied at Sauerbruch's clinic, furnishes in reality a surplus of alkaline valences and therefore cannot be regarded as a therapy by acids.

Blunt Injuries to the Abdomen.—Krecke regards the localized or general reflex rigidity of abdominal muscles as the only reliable early sign of injury to abdominal organs. The costal type of breathing without participation of the abdomen is important. Tenderness of Douglas' pouch is of value as a positive sign. Its absence does not exclude injury. Vomiting, fever or tachycardia may be absent. In doubtful cases it is necessary to repeat the examination at short intervals or to make a small exploratory laparotomy. Four fifths of the patients recover if treated surgically in the first few hours after the injury.

Wiener klinische Wochenschrift, Vienna

39: 1409-1440 (Dec. 2) 1926

Hemopoietic Reactions in Infections. N. Jagić.—p. 1409.
*Action of Phlorhizin. T. Hermann and A. Sachs.—p. 1414.
Experiments on Cholagogues. K. Steinmetzer.—p. 1418. C'td.
Tetany and Alkalosis. J. Holló and S. Weiss.—p. 1422.
Making the Lobule of the Ear Smaller. E. Eitner.—p. 1423.
*Hepatic Abscess and Osteomyelitis After Operation on the Stomach. H. Biesenberger.—p. 1424.
"Neurorelapses and General Paralysis." E. Mattauschek.—p. 1424.
Technic of Bronchopneumography. T. von Liebermann.—p. 1425.

Reply. E. Suchanek.—p. 1425.
Phototherapy. J. Kowarschik.—p. 1425.
Lesions of the Mammary Gland. W. Denk. Supplement.—pp. 1-8.

Action of Phlorhizin.—Hermann and Sachs studied the action of phlorhizin. In patients with hypertension the blood sugar sometimes became lower, even when the urine did not contain sugar. Dextrose appeared in the edema fluid of one patient in a concentration equal to that in which it was excreted by the kidney. In another patient, it was more concentrated in the pleural transudate than in the urine.

Zeitschrift für Kinderheilkunde, Berlin

42: 205-504 (Nov. 6) 1926

*Treatment of Rachitis. W. Schmitt.—p. 205.
Dick's Skin Reaction and Scarlet Fever Immunity. E. Nobel and F. Schönbauer.—p. 248.
*Chemical Examinations of Cerebrospinal Fluid. H. Behrendt and O. Helm.—p. 255.
Antirachitic Effect of Cod Liver Oil Extract. H. Vollmer.—p. 260.
Familial "Symmetric Gangrene." O. Ullrich.—p. 272.
*Susceptibility in Different Types of Tuberculosis in Children. A. Wiskott.—p. 286.
Vitamin Content of Bone-Marrow. M. Schönberger.—p. 306.
Statistical Medical Studies. E. Maurer.—p. 310.
*Trichocephalus Dispar in Pathology. W. Tobler.—p. 324.
*Diseases of the Central Nervous System Due to Vaccination. E. Fiedler.—p. 336.
*Iron Therapy in the Anemia of Premature Infants. L. Landé.—p. 349.
Progressive Muscular Dystrophy in Children. L. Landé.—p. 355.
The Anaphylaxis Problem. B. de Rudder.—p. 361.
*The Dick Reaction and Scarlet Fever Immunity. H. Kunz and E. Nobel.—p. 372.
*Foods and the Evacuation Time of the Stomach. S. Bruchsaler.—p. 381.
Infraclavicular Infiltration in Pulmonary Tuberculosis in Childhood. K. Dietl.—p. 387.
Skin Diseases and the Exudative Diathesis. P. Tachau.—p. 395.
Mycosis Ossificans in Childhood. J. Neideck.—p. 427.
Etiology of Mongolism. H. Orel.—p. 440.
Nutrition and Etiology of Goiter. O. Kirsch.—p. 453.
Gonorrhea in Infants. E. Klaften.—p. 485.
Child Welfare in Vienna. J. Hanusch.—p. 490.
Acute Cerebral Tremors. H. Hirsch.—p. 498.
Feer's Neurosis. K. Erichson.—p. 500.

Treatment of Rachitis.—In his thirty-eight cases of rachitis in infants and children, Schmitt observed that the administration of large amounts of vitamins B and C from birth did not prevent the development of rickets. A cure was effected only in those cases in which there existed a natural tendency to such a termination. Irradiation with ultraviolet rays prevented and cured rachitis, although the food contained only slight amounts of vitamins. In three cases of infantilism, characterized by B avitaminosis, vitamin B was without effect for several months. The same was true in three cases of spasm of the pylorus.

Chemical Examinations of the Cerebrospinal Fluid.—In infants and older children, Behrendt and Helm found that the sugar in the cerebrospinal fluid was increased in some cases of encephalomeningism. Subnormal sugar values were noted both in suppurative and tuberculous meningitis. The inorganic phosphorus varied between 1.2 and 2.9 mg. per hundred cubic centimeters of fluid in nonmeningitic cases, whereas it ranged from 2.7 to 5.1 mg. in meningitis. The lactic acid was considerably increased in Little's disease, septic pyelitis and uremic convulsions. In the absence of convulsions and meningitis, the amount varied between 2.7 and 5.1 mg. per hundred cubic centimeters of fluid.

Susceptibility in Different Forms of Tuberculosis in Children.—Wiskott presents statistics comprising 659 cases of miliary and pulmonary tuberculosis and scrofulosis. It was not possible to establish the presence of an endogenous susceptibility to tuberculosis in the children. Hereditary factors seemed to influence the type and the course of the disease.

Trichocephalus Dispar in Pathology.—Tobler reports the case of a boy, aged 4, infected with trichocephalus, who suffered from diarrhea for several months. His weight was only 5,800 Gm. In the feces 6,000 ova of the parasites per square centimeter were computed. Treatment with thymol and enemas was without effect. The patient succumbed to pneumonia twenty days after admission to the hospital. The number of worms present in the large intestine exceeded 3,000. Eosinophilic leukocytes were not found in the blood.

Disease of the Central Nervous System Due to Vaccination.—Fiedler reports three cases of encephalitis following vaccination. One of the patients died; the others recovered with residual symptoms. Fifty-two cases of diseases of the central nervous system due to vaccination have previously been reported in the literature. It is probable that vaccination, performed at a time when the patient's resistance was low, activated different viruses present in the system in the different cases.

Iron Therapy in Anemia Due to Premature Birth.—Landé administered from 1 to 2.5 Gm. of reduced iron daily to eight prematurely born infants. There was an increase in the hemoglobin and erythrocyte count in the second and third months of life; i. e., at a time when these values are usually decreased. These large doses of iron were digested without disturbance.

The Dick Skin Reaction in Testing Immunity Against Scarlet Fever.—Kunz and Nobel studied the Dick reaction in 327 parturient and 117 pregnant women. In 88 per cent, negative reactions were obtained. Seventy-four per cent of the women with negative reactions did not have scarlet fever in the history. Puerperal fever occurred in 8 per cent Dick negative and in 31 per cent Dick positive cases. It is perhaps possible that there exists an etiologic connection between scarlet fever and puerperal sepsis. Of seventy-four new-born infants, only one had a positive Dick reaction.

Relation Between Foods and the Evacuation time of the Stomach.—Bruchsaler administered sugar solutions to eighteen healthy infants, and studied the gastric contents by fractional aspirations. A certain part of the solution immediately passed into the intestine and was rapidly absorbed. The remaining part was diluted by the gastric secretion. Addition of different nutritional constituents did not have any influence on the velocity of the stomach evacuation and the disappearance of the sugar. Observations of the gastric contents did not give any guidance as to how rapidly the nutritive materials are absorbed by the blood stream; this is rather a matter of the function of the small intestine and the liver.

Zentralblatt für innere Medizin, Leipzig

47: 1145-1176 (Nov. 27) 1926

Bronchiectasis in Children. Duken.—p. 1145.

Mediko-Biologicheskiy Jurnal, Moscow

2: 3-191 (1926)

Clinical Types of Heart Block. V. F. Zelenin.—p. 5.
Influence of Atropine on Heart Block. L. I. Fogelson.—p. 28.
Auricular Rhythm in Heart Block. Zelenin and Fogelson.—p. 49.
*Connection Between Gastric and Cardiac Disturbances. Lyass and Levin.—p. 54.
*Rôle of the Vagus in Extrasystole. I. B. Kabakoff.—p. 73.
Test of Renal Function in Cardiovascular Disorders. E. I. Borisova.—p. 92.
Pathogenesis of Hypertonia. Vovsi Lyass and Shevlyagina.—p. 98.
Effect of "Vegetative" Tests on the Blood Picture. Moshkovskiy, Kabakoff and Rozhkova.—p. 117.
*Morphologic Changes in the Blood in Infections. Moshkovskiy and Mikhina.—p. 146.
Epilepsy of Endocrine Origin. M. Y. Serejskiy.—p. 157.
The Question of Tetanus Treatment. S. G. Zhislina.—p. 160.
Heredity of Hyperthyreosis. A. A. Ivanoff.—p. 166.
Vascular Tonus in the Kidney in Anaphylactic Shock. I. I. Burachevskiy.—p. 175.
Distribution of Sugar in the Blood in Hyperglycemia. N. B. Medvedeva.—p. 187.

Connection Between Gastric and Cardiac Disturbances.—In the examination of patients, Lyass and Levin used Frerich's method for distending the stomach. One dessertspoonful of sodium bicarbonate and one of tartaric acid, each in a glassful of water, was given to the patient, who maintained a recumbent position. The carbonic acid formed produced distention of the stomach. The effect of the distention on the heart was studied in fifty-one young persons, mostly men. Nine were healthy; the others presented a gastric or cardiac disease. Acceleration of the pulse was observed in almost all. In those with normal cardiac contractions, the rhythm did not change. Extrasystolic arrhythmia considerably increased in patients with organic heart disease. The systolic

pressure was unmodified in healthy persons; it showed a tendency to fall in persons with organic heart lesions. Variations in the diastolic pressure did not parallel those in the systolic pressure. The displacement of the heart was insignificant. In the final stage of heart disease, overfilling of the stomach, defecation or even an enema may cause sudden death.

Rôle of Vegetative Nervous System in Extrasystoles.—In Kabakoff's patient, a young woman, symptoms of heart disease appeared after an intense fright. Auscultation four years after the onset of the disease revealed extrasystoles of the allorhythmic type. The pulse was soft and deficient, as compared with the cardiac contractions. There was marked attenuation of all reflexes, enophthalmos and mental depression. Subsidence of the morbid phenomena on the atropine test logically suggested the treatment. Nine subcutaneous injections, each of 0.0005 Gm. of a 0.1 per cent solution of atropine sulphate, were given on successive days. Ten further injections were given after a ten day interval. The pulse rose from 28 to 72 or 78. It became of medium fulness and rhythmic, corresponding to the cardiac contractions. The extrasystoles disappeared and the general condition improved. Resumption of physical work and an abortion did not occasion cardiac disturbance. Pilocarpine and epinephrine tests and forced respiration caused a reappearance of the extrasystoles. These signs, associated with enophthalmos and spastic constipation, testified to hyperexcitability of the vagus. The patient's constitution and an insignificant mitral stenosis were probably responsible for a primary abnormal excitability of the heart, which was aggravated by the nervous factor, fright.

Changes in Morphology of the Blood in Infectious Diseases.—Moshkovskiy and Mikhina found that in infectious diseases the changes in the number of leukocytes are less important than are alterations in the leukocyte itself. Their observations were made in various infections and on the neutrophils in particular. The volume and the shape of the neutrophils were changed. Vacuoles and blue and chromatic inclusions were manifest in the protoplasm. A cyanophil substance was also present there. Many neutrophils presented changes analogous to those in erythrocytes; namely, anisocytosis, poikilocytosis, basophil reticulum and basophil granulations. The cyanophil substance is readily stained by an alkali blue. One gram of methylene blue is mixed with 2.5 Gm. of borax and 200 Gm. of water. The dye is applied for from one to three minutes. Methylene blue with fuchsin can be used only as an adjuvant.

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69: 1153-1176 (Dec. 16) 1926

*A Transmissible Agent Which Alters Iso-Agglutination of Erythrocytes. O. Thomsen.—p. 1154.

A Transmissible Agent Which Alters the Iso-Agglutination of Erythrocytes.—Making compatibility tests with blood belonging to group I (O) and taken from two persons, Thomsen accidentally found that the blood samples, after standing over night at room temperature, reacted as group IV (AB). The blood had been taken from the ear, and was suspended in distilled water containing 0.7 per cent of sodium chloride and 0.25 per cent of sodium citrate. Control experiments on the same persons the next day established that they belonged without doubt to group I (O). The "altered" erythrocytes, i. e., the corpuscles which the next day reacted as group IV (AB), did not show any morphologic changes or traces of hemolysis. Bacteria were isolated from these changed blood samples, but cultures did not have any influence on the iso-agglutination. The same day that the phenomenon was first observed, a drop of the changed blood was added to a fresh suspension of capillary blood of group I (O). After thirty-six hours, the erythrocytes agglutinated strongly with serums of groups I, II, III and IV, without showing morphologic changes or hemolysis. It has been possible to repeat and maintain the phenomenon for four months by daily addition of a drop of "altered" blood to a suspension of fresh blood. In control experiments, this change was not seen. Each of the four blood groups presented the same phenomenon. The agglutination took place in serum concentrations as low as from 1:40 to 1:80, and when a drop of this was added to fresh blood the latter acquired the same property. Addition of lecithin did not inhibit agglutination. When the changed erythrocytes were washed with sodium chloride and centrifugalized it was found that both erythrocytes and supernatant fluid were able to produce the phenomenon, the latter usually first, after from forty-eight to ninety-six hours. The change took place with the same velocity at a temperature ranging from 10 to 20 C. but an inhibition was noted at 37 C. Heating to 65 C. for thirty minutes and exsiccation did not destroy the property. The author explains the phenomenon in the following manner: Human erythrocytes of each group contain a third receptor, L (latent), which is covered under physiologic conditions, but which under certain circumstances (at least in vitro) becomes activated and reacts with a third specific agglutinin, independent of α and β agglutinins, present in human blood serum. The third agglutinin is absorbed by the altered erythrocytes (of any group). The altered erythrocytes of group I (O), which do not contain A and B receptors, do not decrease the α and β agglutinins in the serum, but they inactivate the serum against a new portion of the altered erythrocytes of group I (O). In this manner it was possible to inactivate serum of group IV against altered erythrocytes by adsorption with changed blood of any type. Adsorption with normal erythrocytes of groups II, III or IV did not change the agglutinating effect of serum in relation to the altered erythrocytes, although α and β agglutinins were removed. The serum of new-born infants, which contains α and β agglutinins but seldom, and then only in slight concentrations, did not contain agglutinin against the altered erythrocytes. The rôle of this self-reproducing agent is thus that it uncovers in vitro the receptor L, which is covered in vivo, since otherwise the erythrocytes would be agglutinated in their own serum. The nature of this transmissible agent is still completely unknown, but the observations explain the panagglutination which has been previously reported in the literature, and will help in the avoidance of errors in the compatibility tests.

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88: 1167-1186 (Dec. 23) 1926

Serum Disease in Treatment of Diphtheria. H. Heckscher.—p. 1167.
*Prophylactic Treatment of Serum Disease with Staphylococcus Vaccine. H. Heckscher.—p. 1169.
Substitution of Fat in Diets. H. Hansborg.—p. 1172.

Prophylactic Treatment of Serum Disease with Staphylococcus Vaccine.—Heckscher injected daily for five days from 0.2 to 5 cc. of staphylococcus vaccine, according to the age, in diphtheria patients, who four days previously had been treated by injection of large doses of antitoxin serum. This prophylactic treatment decreased the incidence of serum sickness from 53 to 39 per cent.

88: 1187-1204 (Dec. 30) 1926

*Treatment of Warts with Calcium Salts. C. Gram.—p. 1187.
Puerperal Pregnancy Anemia. J. Nordentoft.—p. 1189.
Immunization Against Measles with Sheep Serum. M. S. Andersen.—p. 1190.

Treatment of Warts with Calcium Salts.—In his treatment of warts in thirty-three persons, Gram applied a hydrous wool fat ointment prepared by mixing two parts of either calcium carbonate or calcium phosphate with three parts of hydrous wool fat. There were not any signs of cure until two or three weeks had elapsed after the beginning of the treatment, but the warts disappeared as a rule within from four to six weeks. The treatment is painless, it does not leave scars and recurrences were not observed. Warts which had shown a marked resistance to other remedies yielded to the calcium ointment. Histologic examinations of warts treated for fourteen days showed hyperplasia of the epidermis with hyperkeratosis. The epithelial cells were not degenerated. In the upper layer of corium were seen round cell infiltrations and a large number of plasma cells. Warts that were cast off showed normal skin with increase of papillae and infiltration of round cells. It was not possible to establish the presence of calcium precipitations. The mild ointment treatment is especially applicable to children.